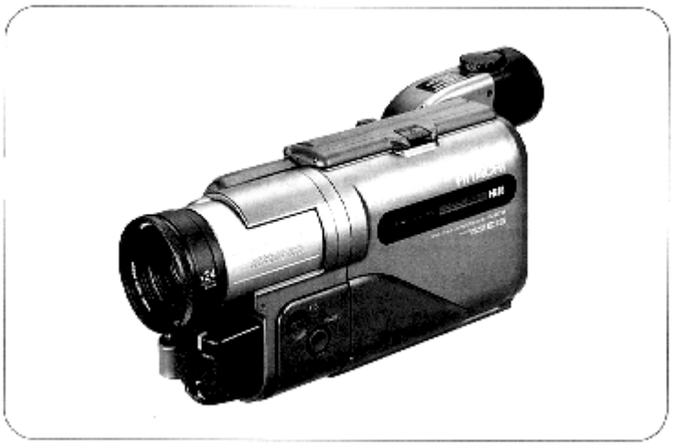
HITACHI

Instruction Manual

Hi 8

8mm Video Camera/recorder

VM-H71A



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Thank you for buying a Hitachi product. You've chosen the best 8 mm video camera/recorder for you, and we want to help you make the most of your purchase. Please take time to become familiar with the manual and how it is set up. Keep it handy for feature reference.

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For Your Safety

The CAM/OFF/VIDEO switch turns the camera/recorder on and off, leaving the date/time feature unaffected. If the unit is to be left unattended for a long period of time, turn the camera/recorder off and attach the lens cap and terminal cover.

WARNING: WHEN OUTDOORS, DO NOT USE AC ADAPTER/CHARGER, USE ONLY BATTERY PACK, TYPE: VM-NP500H

Illustrated below is the label on the bottom of your unit.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electrical shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully to avoid any problems.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, AND FULLY INSERT PLUG.

WARNING: Many television programs and films are copyrighted. In certain circumstances, copyright law may apply to private in-home videotaping of copyrighted materials.

"This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications."

This camera/recorder can use 8 and Hi8 video cassettes. It automatically determines the loaded cassette is 8 or Hi8 and records and plays it back correctly.

The liquid crystal display (LCD) panel is made by highly precise

technology. More than 99.99% of its picture elements (pixels) are effective, but some (less than 0.01%) may appear as colored bright dots. This does not indicate a fault as the LCD panel stretches the limits of current technology.

Warning: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits of Class B digital device, pursuant of Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.
Caution to the user: Changes or modifications not expressly approved by the manufacture could void the user's authority to operate the equipment.

"Note to CATV system installer: This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical".

Notes:
This unit uses 8mm video format cassettes.
It records and plays back in the SP mode (14.3 mm/sec).
It cannot record and play back in the LP mode (7.2 mm/sec).
This camera/recorder uses a Hi-Fi stereo sound system. When a tape recorded by this camera/recorder is played by a conventional 8mm camera/recorder, monaural sound is output. When a tape recorded by a conventional 8mm camera/recorder is played by this machine, monaural sound is output.

MOISTURE

Avoid operating your camera/recorder immediately after moving it from a cold place to a warm, humid place. Give the camera/recorder 2 to 3 hours to stabilize in the ambient conditions of the surroundings before inserting a cassette. When moved from a cold place to a warm, humid place, moisture may condense on the head drum inside the machine. This moisture could cause the tape to stick to the headwheel and damage the headwheel or tape.
When moisture is detected, the camera/recorder ejects the tape automatically to protect it, so the camera/recorder cannot be operated.
When a small amount of moisture is sensed, "TAPE" flashes in the

viewfinder. Remove the cassette and set the CAM/OFF/VIDEO switch to OFF, with the case open.

IMPORTANT SAFEGUARDS

In addition to the careful attention devoted to quality standards in the manufacture of your video product, safety is a major factor in the design of every instrument. But, safety is your responsibility too.
This page lists important information that will help to assure your enjoyment and proper use of a Video Camera/Recorder and accessory equipment. Please read it carefully before operating your video product and keep it in a handy place for future reference.

INSTALLATION

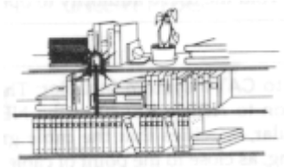
1 Read and Follow Instructions -- All the safety and operating instructions should be read before the video product is operated. Follow all operating and use instructions.

2 Retain Instruction -- The safety and operating instructions should be retained for future reference.
3 Heed Warnings -- Comply with all warnings on the video product and in the operating instructions.
4 Polarized Plug -- This video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. To prevent electric shock do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted without blade exposure. If you need an extension, use a polarized cord.

5 Power Sources -- This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your video dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.
6 Overloading -- Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords, damaged or cracked wire insulation and broken plugs. They may result in shock or fire hazard. Periodically examine the cord and have it replaced by your service technician if appearance indicates damage or deteriorated insulation.

7 Power Cord Protection -- Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience

receptacles, and the point where they exit from the appliance.
8 Ventilation -- Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the video product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the video product manufacturer's instructions have been followed.



9 Attachments -- Do not use attachments unless recommended by the video product manufacturer as they may cause hazards.

Caution: Maintain electrical safety. Power-line operated equipment or accessories connected to this unit should bear the UL listing mark or CSA certification mark on the accessory itself and should not have been modified so as to defeat the safety features. This will help avoid any potential hazard from electric shock or fire. If in doubt, contact qualified service personnel.

10 Water and Moisture -- Do not use this video product near water -- for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
11 Accessories -- Do not place this video product on an unstable card, stand, tripod, bracket or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer, or sold with the video product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
11A An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

12 Outdoor Antenna Grounding -- If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See example below:
EXAMPLE OF ANTENNA GROUNDING

13 Power Lines -- An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching or approaching such power lines or circuits as contact with them might be fatal. Installing an outdoor antenna can be hazardous and should be left to a professional antenna installer.

USE

14 Cleaning -- Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

15 Object and Liquid Entry -- Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product.

16 Lightning -- For added protection for this video product during a lightning storm, or when it its left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable-system. This will prevent damage to the video product due to lightning and power-line surges.

SERVICE

17 Servicing -- Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

18 Conditions Requiring Service -- Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions.

a. When the power-supply cord or plug is damaged

b. If liquid has been spilled or objects have fallen into the video product.

c. If the video product has been exposed to rain or water.

d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.

e. If the video product has been dropped or the cabinet has been damaged.

f. When the video product exhibits a distinct change in performance -- this indicates a need for service.

19 Replacement Parts -- When replacement parts are required, have the service technician verify that the replacements he uses have the same safety characteristics as the original parts. Use of replacements specified by the video product manufacturer can prevent fire, electric shock or other hazards

20 Safety Check -- Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks recommended by the manufacturer to determine that the video product is in safe operating condition.

21 Heat -- The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

IMPORTANT SAFETY INSTRUCTIONS FOR AC ADAPTER/CHARGER

1. Save these Instructions -- This page contains important safety and operating instructions for AC Adapter/Charger Model VM-AC500A.
2. Before using AC Adapter/Charger, read all instructions and cautionary markings on (1) AC Adapter/Charger, (2) battery and (3) product using battery.
3. Also read all instructions on pages 4 and 5.

4. **Caution --** To reduce risk of injury, charge only rechargeable battery, VM-NP500H.
Other types of batteries may burst causing personal injury and damage.

5. Do not expose the charger to rain or snow.
6. Use of an attachment nor recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
7. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
8. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
9. Do not operate charger with damaged cord or plug -- replace them immediately.
10. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
A. The pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
B. That extension cord is properly wired and in good electrical condition; and
C. That wire size should be met below:

Minimum AWG size	Length of extension cord (feet)
18	Equal to or less than 100
16	Equal to or less than 150

11. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
12. Do not disassemble charger: take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
13. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

Read This First

To guide you, we've included

A "Before You Begin" section containing important cautions for your family's safety as well as instruction for getting your video camera/recorder ready for use. Please read and understand this section thoroughly before moving on.

A "Getting Started" section to familiarize yourself with the controls and prepare you for recording.

A "Basic Techniques" section to allow you to use your video camera/recorder quickly and confidently before advancing to the more sophisticated features of the Hitachi VM-H71A.

"Advanced Techniques" to help you with some of the exciting, sophisticated features of the Hitachi VM-H71A. We hope you will take the time to learn about these functions since they have been designed for you. You can use the video camera/recorder without reading this section.

A "General Maintenance" section to help keep your purchase in good repair.

We want this manual to be as helpful as possible, so it includes two easy ways to find the information you need:

A quick index for the information you use most often (this page).

A detailed table of contents directing you to specific information quickly

Get to know your video camera/recorder by using this manual, and get to know Hitachi. We appreciate your business.

Before You Begin

Any problems that occur as a result of any of the following conditions will not be covered by our warranty.

Be careful that no water, dust or sand enters the camera/recorder.

When you shoot at a scene which contains an extremely bright object such as the sun or a light source, a bright vertical bar may appear in the picture.
Your camera/recorder is functioning properly, but the solid-state pickup device (C.C.D.) usually causes this as an inherent characteristic. Try to avoid shooting an excessive bright object directly.

Be sure not to leave it in a place where the temperature exceeds 120° (49°C), or the pickup device may be damaged.
Dangerous includes:

Inside a car with the windows closed and in direct sunshine.

Near heating appliances.

Do not leave the viewfinder lens facing sunlight for a prolonged period, or the phosphorescent surface of the cathode ray tube or the liquid crystal display (LCD) panel may be damaged.

Features

Water-resistant

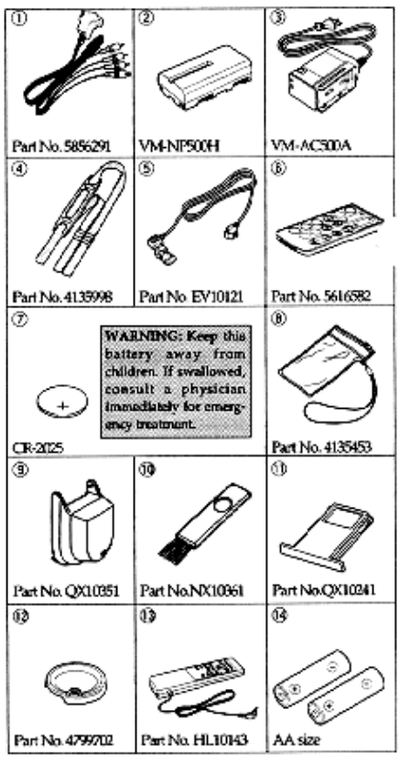
Hi8

Easy to use
24x zoom ratio
Instant zoom
Multi-function TV / Cam remote control
Image stabilization
Color electronic viewfinder (EVF)

Components and Accessories

Check that you have all the following components and accessories before preceding.

1. AV stereo output cable with S-VIDEO plug
2. Battery pack
3. AC adapter/charger
4. Shoulder strap
5. External power cord
6. Remote control
7. Remote control battery
8. Remote control bag
9. Microphone cap
10. Brush
11. Terminal cover
12. Lens cap
13. Edit remote control
14. Batteries for edit remote control



Optional RF Output Adapter

If you wish to connect this camera/recorder to a television that does not have audio/video input jacks you will need to use the optional RF output adapter model VM-RF86A.

The RF output adapter can be purchased by calling the telephone number below. For your convenience Visa, Master Card, and American Express credit cards are accepted. The RF output adapter can also be purchased by mail by sending either cheque, money order or your credit card information to the following address:

IN U.S.A.
Hitachi Home Electronics (America), Inc.
Parts Division
401 West Atresia Blvd.
Compton, California. U.S.A. 90220
Tel: 1-800-HITACHI (1-800-448-2244)

For more information concerning the purchase of camera/recorder

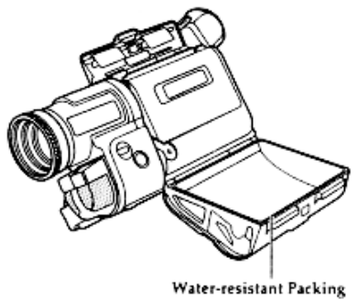
accessories, please see the optional accessory listing found on page 65.

WATER-RESISTANT

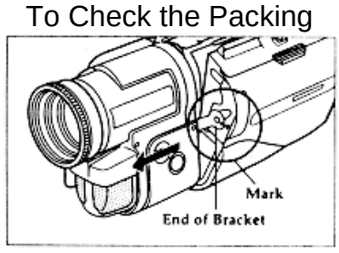
Water-Resistant Structure

Your camera/recorder uses three packings as shown below to provide a water-resistant structure.

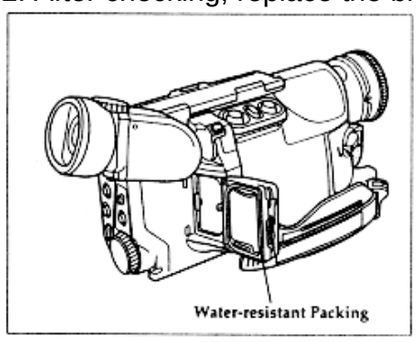
Case

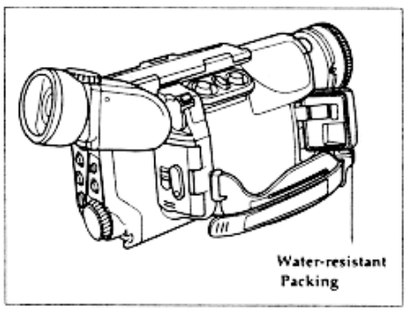


To Check the Packing



1. Open the case so the end of the bracket is positioned as shown in the figure and pull the bracket forward to release it.
2. After checking, replace the bracket to its original position.





CAUTION

How to Handle the Water-resistant Packings

Inspect the water-resistant packings constantly to check that there are no scratches or chipping as they could cause water to enter.

Check that no foreign matter adheres to the water-resistant packings before closing the cases. If the camera/recorder is used while dust, sand, or thread adheres to only one point if the packings, it could cause water to enter.

Consult your nearest dealer to replace the packings.

The Camera/Recorder cannot be used in the following places

Under water

In a place with high temperature and high humidity such as in a sauna, bathroom, etc.

Where water would strike it violently (where water pressure is applied)

Note: The camera/recorder cannot be used under water because it is not water-proof.

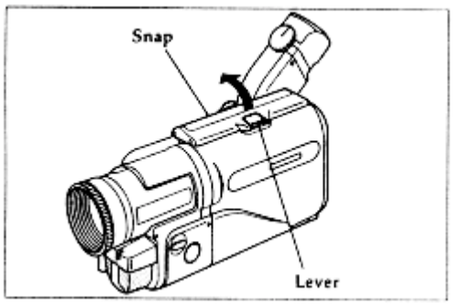
Be Careful when Opening and Closing the Sections with Packing

The camera/recorder inside the case is not structured to be water-resistant. Take great care that no water droplets enter inside.

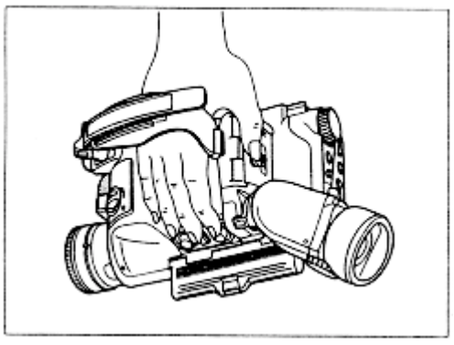
Check that the three sections with packing are closed tightly to ensure that it is water-resistant.

How to Open and Close the Case

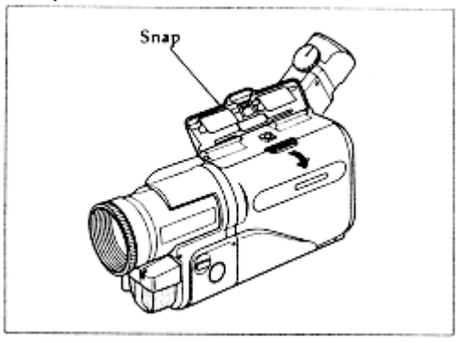
1. Push the lever on the snap and hold it, then release the snap in the direction of the arrow.



Note: After using the camera/recorder, wipe off the sand or water droplets carefully from the case before opening it. Since water droplets or sand may remain under the snap, release the snap in the condition shown in the figure and wipe off the water droplets or sand carefully.

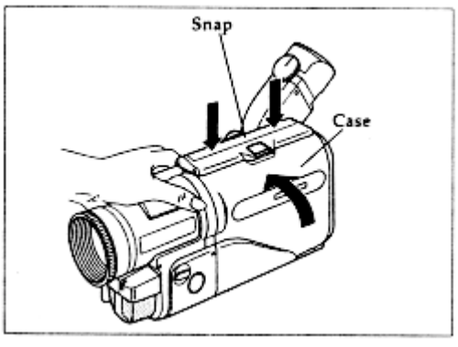


2. Open the case in the direction of the arrow.



3. To close the case, hold the left and right cases tightly and close the snap until a click is heard.

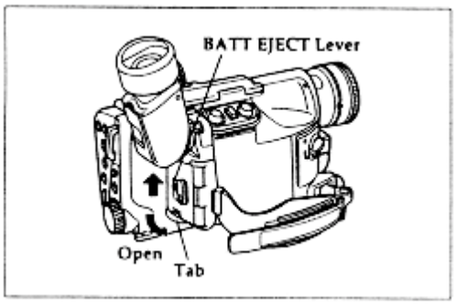
Note: Lock the case securely using the snap. Otherwise, it could allow water to enter.



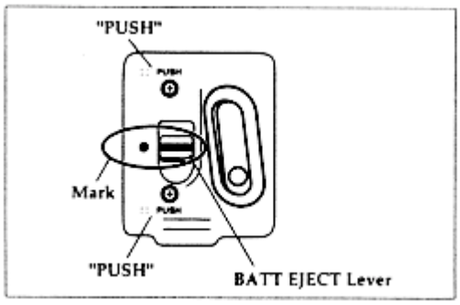
How to Open and Close the Battery Compartment Cover

1. Push the BATT EJECT lever in the direction of the arrow to unlock the

cover. Pull the cover forward to open it.

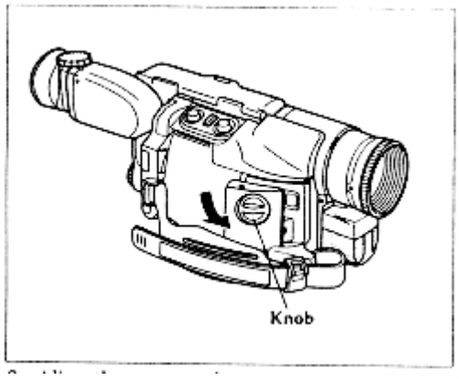


2. To close the battery compartment cover, press both sections marked "PUSH" simultaneously and make sure that a click is heard. Also check that the BATT EJECT lever is aligned with the mark as shown in the figure below.

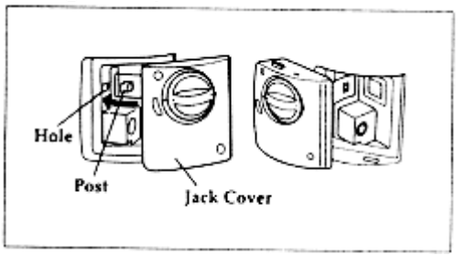


How to Open and Close the Jack Cover

1. To open, turn the knob on the jack cover in the direction of the arrow.

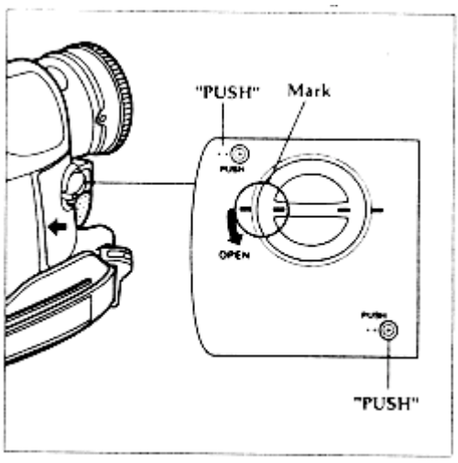


2. Align the post on the cover with the hole in the case.



NOTE: The plug can easily be inserted and pulled out when the post on the cover is inserted into the hole.
NOTE: Release the post from the hole to close the jack cover.

3. To close the jack cover, Press the two sections marked "PUSH" and make sure that a click is heard. Also check that the knob is aligned with the mark as shown in the figure below.



To Prevent Condensation

When the camera/recorder is moved from a cold place to a warm place, leave it for a while until it reaches the ambient temperature before opening the case.

Be careful that no water droplets or snow flakes enter when opening the case. If they enter, the humidity inside rises and condensation is likely to occur.

Moisture also condenses on the lens. If moisture condenses on the lens, clear pictures cannot be recorded.

Dry the camera/recorder with the case open and use it after condensation on the lens disappears.

Open the case if there is condensation. Otherwise, it is hard to dry the camcorder. Otherwise, it is hard to dry the camera/recorder.

Getting Started

This section guides you through the initial preparation of the camera/recorder. None of these processes are complex. Set aside some time, relax, and familiarize yourself with this quality instrument.
Enjoy getting to know all about your Hitachi 8mm camera/recorder. The more comfortable and familiar you are with the machine and its features, the more you can make it do for you. Let's get started!
It is crucial that you read and understand all the safety instructions before you begin. If you haven't read the safety instructions yet, please take the time to do so now.

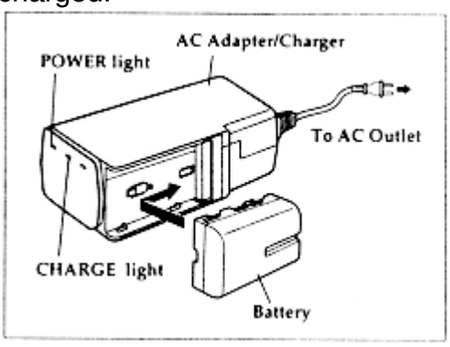
Charging the Battery

The first step is to set the battery to charge. Once fully charged the battery will give an operating time of approximately 70 minutes, but this is reduced to a half to one-third depending on how often you use zoom and stop/start functions.
Charge the battery at a temperature range of 50°F(10°C) - 86°F(30°C) to prevent damage to the battery.

Using the AC Adapter/Charger

To Charge the Battery Attached to the AC Adapter/Charger

1. Plug the AC adapter/charger power cord into an AC outlet. Make sure that the wide blade fits into the wide slot. If it doesn't fit try reversing it. If you still cannot make fit the blades fully into the outlet either contact an electrician to replace your obsolete outlet, or use a polarized cord or outlet accessory.
2. Push the battery till it is flush with the AC adapter/charger sliding it in the direction of the arrow as shown in the figure.
3. The CHARGE light turns on as shown in the table to the right as charging progresses. The CHARGE light turns off when the battery is fully charged.



CHARGE light	Charging time
	Charging starts
	About 30 minutes
	About 50 minutes
	About 90 minutes
	Charging complete About 150 minutes

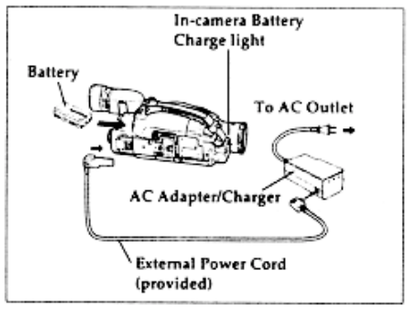
To Charge the Battery Loaded in the Camera/Recorder

You can charge the battery while it is loaded in the camera/recorder after

recording is finished, etc. (Load a battery in the camera/recorder. Refer to "POWER SOURCES" on page 19.)

1. Set the CAM/OFF/VIDEO switch of the camera/recorder to "OFF".
2. Connect the external power cord plug to the DC OUTPUT jack on the AC adapter/charger.
3. Attach the other end of the external power cord into the installation section at the bottom of the camera/recorder.
4. Plug the AC adapter/charger power cord into an AC outlet. The in-camera battery charge light turns on (green). When charging is finished, the light turns off.

Charging Time
About 6 hours



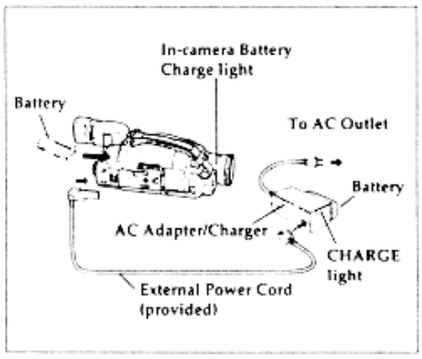
Note: The CHARGE light on the AC adapter/charger does not turn on.
Note: The CAM/OFF/VIDEO switch must be in "OFF" position to charge the battery inside the camera/recorder.
Note: The camera/recorder becomes warm during charging, but this is normal.
Note: If the battery is left in the camera/recorder, the battery power will decrease even when the camera/recorder is not used. Do not leave the battery in the camera/recorder after charging it. Be sure to remove it.
Note: Before attaching the external power cord, check that there is no sand, water, or dirt adhering to the terminal of the attachment section. If anything adheres to the terminal, use the brush (provided) or a soft cloth to wipe it off completely.

To Charge Two Batteries in Sequence

You can continuously charge the battery attached to the AC adapter/charger and the battery loaded in the camera/recorder.

1. Set the CAM/OFF/VIDEO switch of the camera/recorder to "OFF".
2. Load a battery inside the camera/recorder.
3. Connect the external power cord plug to the DC OUTPUT jack on the AC adapter/charger.
4. Attach the other end of the external power cord to the installation section at the bottom of the camera/recorder.
5. Attach another battery to the AC adapter/charger.
6. Plug the AC adapter/charger power cord into an AC outlet. Charging the battery attached to the AC adapter/charger starts first. The CHARGE light on the AC adapter/charger lights during charging and goes out when charging is finished. Charging the battery inside the camera/recorder then starts. The in-camera battery charge light lights during charging and goes out when charging is finished.

Note: Normally the in-camera battery charge light also lights when the AC adapter/charger is plugged into an AC outlet. However, this light may not light depending on the charged level of the battery loaded in the camera/recorder.

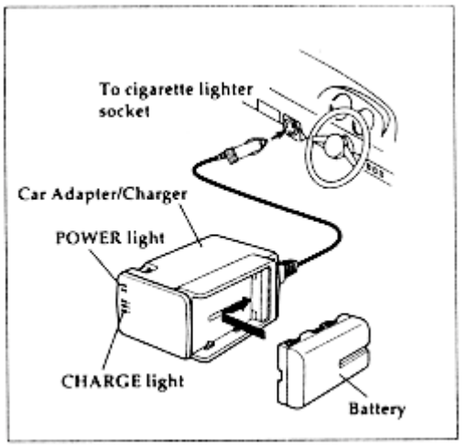


Charging time
8.5 hours (maximum)

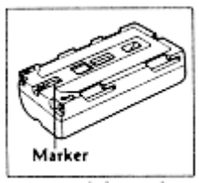
Using an Optional Car Adapter/Charger (Hitachi VM-CA500A)

1. Connect the car adapter/charger to the car's cigarette lighter socket. The power light turns on.
2. Attach the battery to the car adapter/charger. The charge light turns on and charging starts. The light turns off when charging is finished.

Note: When the car adapter/charger is connected to the camera/recorder via the external power cord, set the CAM/OFF/VIDEO switch of the camcorder to "OFF". Charging is not done when it is set to "CAM" or "VIDEO".
Note: Read the instruction manual of the car adapter/charger carefully before charging.



Additional Information



The battery has a green charge marker on one side of the battery. When the battery is removed from the AC adapter/charger a green color marker will be exposed. When the battery is ejected from the camera/recorder no green marker will be seen.

Note: The marker switch does not guarantee the Batteries charge status.

With repeated normal charging and use the battery will gradually lose operating time. When operation time becomes too short to be useful, replace the battery.
If all three CHARGE indicator lights flashes during charging, remove the battery and then reattach it to the AC adapter/charger. If the CHARGE light continues to flash after several attempts to attach it, the battery is

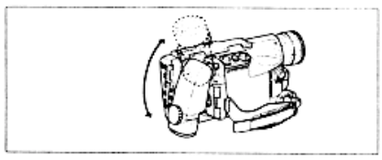
unable to take a charge and must be replaced. Do not attach a hot battery to the AC adapter/charger. Allow it to cool. Do not use a battery with a crack or any abnormalities in its appearance.

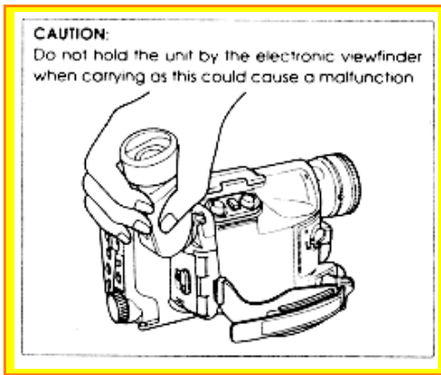
THERE ARE NO USER-SERVICEABLE PARTS INSIDE THE BATTERY OR AC ADAPTER/CHARGER.
THROWING THE BATTERY INTO FIRE OR EXPOSING IT TO EXCESSIVE HEAT (ABOVE 149°F (65°C)) MAY CAUSE INJURY.
SHORTING THE BATTERY'S TERMINAL INCREASES RISK OF FIRE OR ELECTRICAL SHOCK

Adjusting the Electronic Viewfinder

The electronic viewfinder adjusts simply by pivoting it to a position where it is comfortable and easy to see through. Place the viewfinder back in its original position before storing the camera/recorder in its case or carrying the camera/recorder around to avoid damaging the viewfinder or camera/recorder.

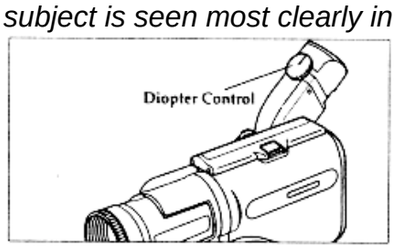
Caution: Do not point the electronic viewfinder to direct sunlight; it could damage the viewfinder.





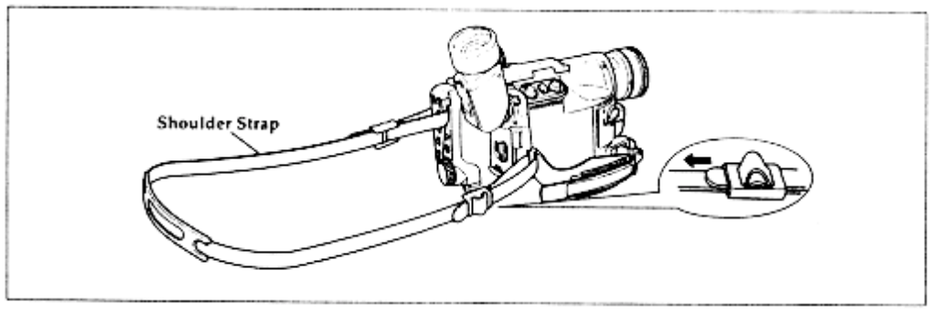
Eyepiece Adjustment

To use the electronic viewfinder, adjust the diopter control so that the subject is seen most clearly in the viewfinder.



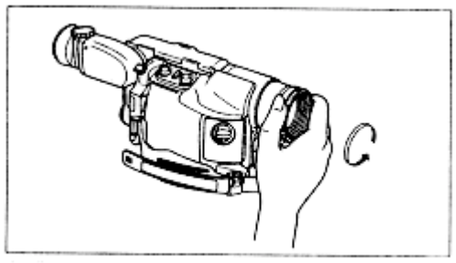
Attaching the Shoulder Strap

Thread the ends of the provided shoulder strap through the slots at the back of the camera/recorder and thread through the shoulder strap's buckles. Please ensure that the straps are securely fastened before using the shoulder strap to carry the camera/recorder.

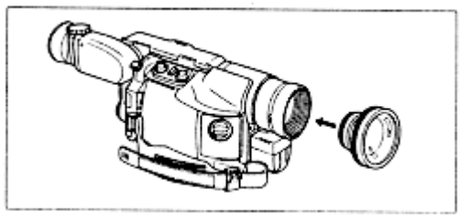


Attaching the Optional Wide or Tele Converter Lens

1. To remove the lens hood, turn it counterclockwise.



2. Remove both caps of the converter lens.
3. Screw the lens into the threads on the camera/recorder lens assembly.



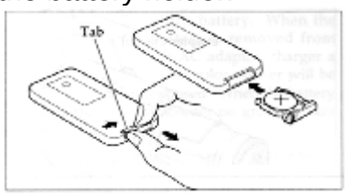
Note: The wide and tele converter lenses (optional) are not water-resistant.

Loading Batteries

Install the remote control battery now to prevent misplacing it.

Remote Control Battery

1. Push the tab to the right of the remote control and hold it, then remove the battery holder.

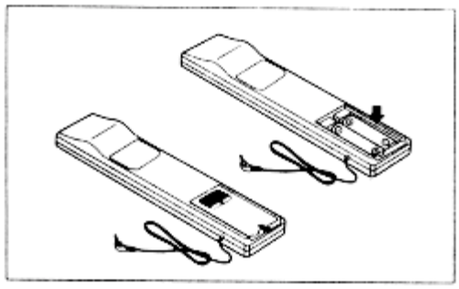


2. Press the PLAY button and hold it for about two seconds.
3. Insert the battery with the "+" terminal facing in the direction of the open side of the battery holder.
4. Replace the battery holder with battery in the remote control making sure that it is fully inserted.

WARNING: KEEP THE BATTERIES AWAY FROM CHILDREN AND PETS. IF SWALLOWED CONSULT A PHYSICIAN IMMEDIATELY FOR EMERGENCY TREATMENT.

Note: Replace the remote control battery with 3V micro lithium cells such as Maxell CR2025 or its equivalent.
Note: Dispose of battery safely in accordance with local laws. Do not dispose of in fire.

Edit Remote Control Batteries



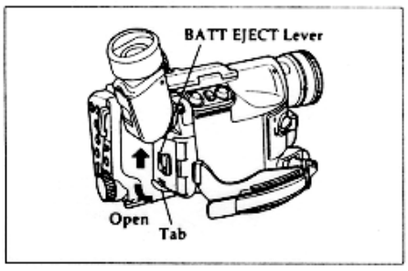
Be sure to install two "AA" size batteries before use.
Be careful to install with the correct polarity.

Note: Do not use the old and new batteries at the same time.
Note: Do not mix batteries of different types.
Note: Do not short, take apart, or dispose of batteries by throwing them into a fire.
Note: When liquid leaks, wipe it off completely and then insert new batteries.

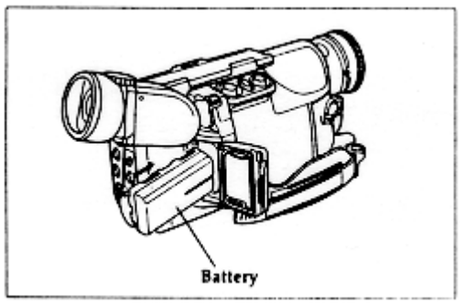
Camera/Recorder Battery

Before you install the battery for the first time it must be charged. Refer to "Charging the Battery" for details.

1. Push the BATT EJECT lever in the direction of the arrow to unlock the battery compartment cover. Pull the tab forward to open the cover.

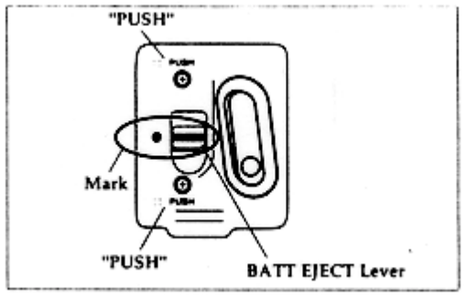


2. Insert the battery with the correct orientation all the way until a click is heard.



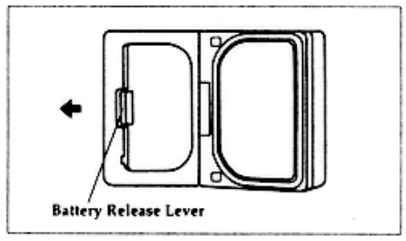
3. Close the cover firmly.

Note: Check that the BATT EJECT lever is aligned with the mark after closing the cover. If the cover is not closed securely, water or dust may enter the battery compartment.



Removing the Battery

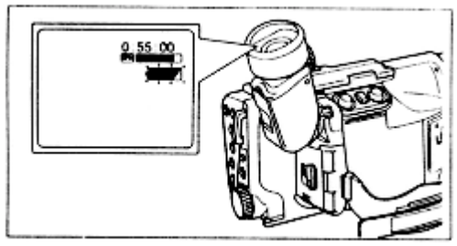
1. Push the BATT EJECT lever to open the battery compartment cover.
2. Push the battery release lever in the direction of the arrow; the battery will come out. Pull the battery forward to remove it.

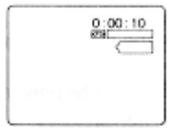


Note: The battery is ejected by the force of a spring. Be careful not to drop the battery.

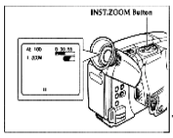
Checking the Battery's Charge

A battery charge indicator is located on the upper right corner of the viewfinder. One of three symbols displays when the battery is used.

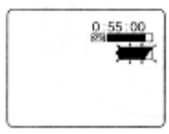




This symbol indicates a fully charged battery.



This symbol indicates a partially charged battery.



This flashing symbol indicates a battery nearly out of power. Use an alternative power source or charge the battery before continuing to use the camera/recorder.

Using Alternative Power Sources

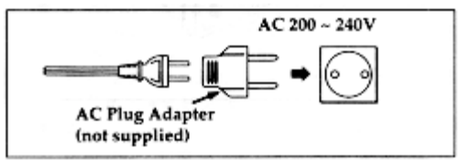
Using the AC Adapter/Charger

Please ensure that the CAM/OFF/VIDEO switch is in the OFF position whenever attaching or detaching any power supply (ie. battery, AC adapter/charger, etc.)
Before attaching the external power cord check that there is no sand, water or dirt adhering to the terminal of the attachment section. If anything

adheres to the terminal, use the brush (provided) or a soft cloth to wipe it off completely.
AC Adapter/Charger Hookup

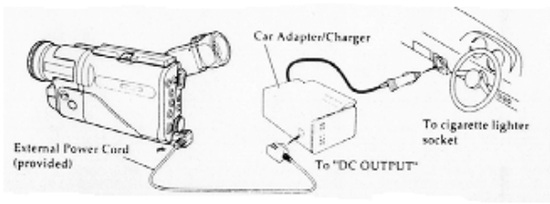
1. Plug the AC adapter/charger power cord into an AC outlet. Make sure that the wide blade fits into the wide slot. If it doesn't fit try reversing it. If you still cannot make fit the blades fully into the outlet either contact an electrician to replace your obsolete outlet, or use a polarized cord or outlet accessory.
2. Attach the external power cord to the camcorder.
3. Connect the external power cord plug to the DC OUT jack of the AC adapter/charger.

Note: The AC adapter/charger can be used around the world. An AC plug adapter is required in some foreign countries. If you need one purchase it at your Hitachi distributor.



Using a Car Battery

The camera/recorder can be powered with a car battery by using an optional car Adapter/Charger (Hitachi VM-CA500A) to plug the camera/recorder into the car's cigarette lighter socket. Please ensure that the CAM/OFF/VIDEO switch is in the OFF position whenever attaching or detaching any power supply (ie battery, AC adapter/charger, etc.)



1. Connect the car adapter/charger to the car's cigarette lighter socket.
2. Attach the external power cord to the camera/recorder.
3. Connect the external power cord plug to the DC OUTPUT jack of the car adapter/charger.

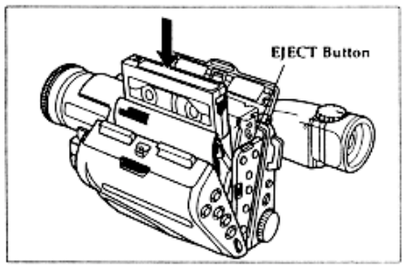
Note: Only use the car adapter/charger with cars having 12/24 volts negative ground system.

Inserting and Removing Cassettes

A power source must be connected before inserting or removing cassettes. Once connected cassettes can be inserted or removed whether the CAM/OFF/VIDEO switch is on or off.

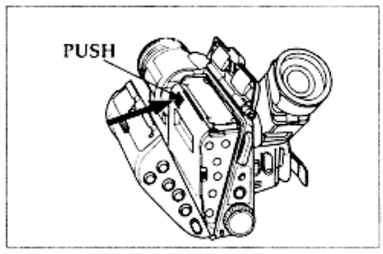
Inserting a cassette

1. Open the case ("How to Open and Close the Case", p.10).
2. Press the EJECT button. The cassette holder will rise and the cassette door will open.
3. Place the cassette in the cassette holder so that the transparent window faces away from the body of the camera/recorder and the sprockets toward the body of the camera/recorder.



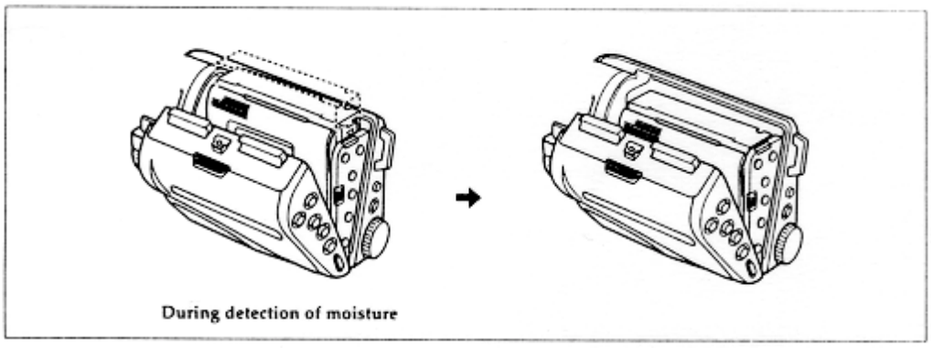
4. Push the cassette holder, which is embossed PUSH on the left hand side, until it "clicks" into place. The cassette holder will go down automatically closes.

Caution: Do not push the holder down, or you may damage your camera/recorder.
Note: The cassette holder will temporarily stop in the middle when it goes down to regular closed position. This is to detect moisture and does not indicate a fault.
Note: If direct sunlight or bright artificial light enters the inside of the cassette holder, the cassette holder may not operate normally. Remove the cassette and insert it in a place where strong light does not strike the camera/recorder.



When the cassette holder marked "PUSH" is pressed:

If the cassette is in the camera/recorder, holder stops temporarily to detect moisture.



Note: If TAPE flashes in the viewfinder, remove the cassette and check that the tape is not damaged, is not slack or no dust adheres to it, etc. After making sure that there is no abnormality, reinsert the cassette. If TAPE reappears, see "Troubleshooting" on page 58.

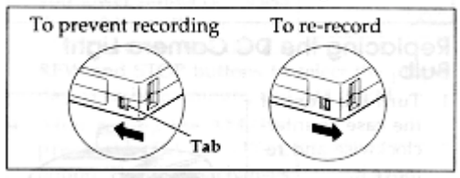
Removing a Cassette

Press the EJECT button. The cassette door opens automatically. Remove the cassette.

Protecting Recording Material

Protect 8mm cassettes from accidental erasure by sliding the tab on the side of the cassette towards the opposite side until the tab is completely visible. Slide the tab in the opposite direction, until the tab disappears, to

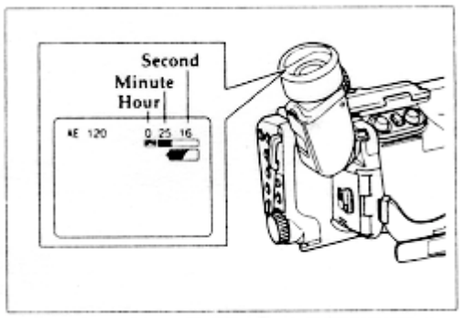
record on the cassette again.



Using the Linear Time Counter

The linear time counter displays the tape run in hours, minutes, and seconds helping you to keep track of how long you've been filming or time you have left to film before running out of tape.

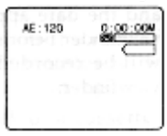
Turn the camera/recorder on to display the linear time counter. The linear time counter keeps track from when you load a cassette into the camera/recorder and clears to 0:00:00 when the cassette is ejected.



Using the Display Button

Pressing the DISPLAY button on the remote control allows you to switch the displays in the viewfinder. When the camera/recorder is turned on, the linear time counter appears.

Pressing the DISPLAY button once displays the linear time counter with the memory feature.



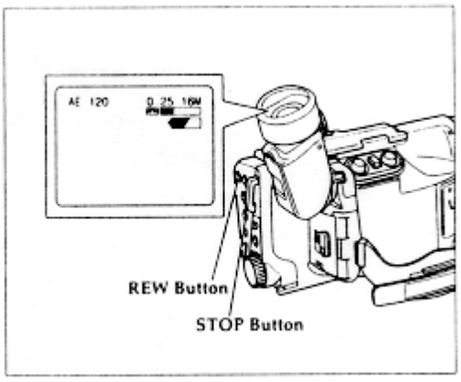
Note: The linear time counter with the memory feature in the viewfinder can also be displayed on the connected television.

Pressing the DISPLAY button a second time returns to the linear time counter.

Using Memory

The linear time counter memory stops a rewinding tape at approximately 0:00:00M. This feature helps in locating a specific point in the tape to which you wish to return. An example might be that you have recorded some tape that you have already watched, you continue recording but do not care to watch the tape you recorded earlier. The memory feature returns you to the beginning of the most recent recording.

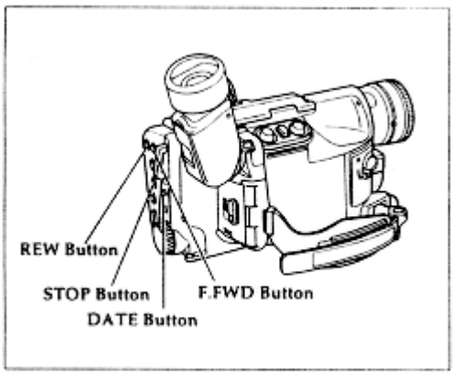
1. Press the DISPLAY button on the remote control so the linear time counter with memory is displayed as shown in the figure.
2. Start recording or playback of a cassette. Press the COUNTER RESET button on the remote control at the point to which you wish to return. The linear time counter clears to 0:00:00M.
3. Press the STOP button to stop playback, or press the start/stop button to stop recording and set the CAM/OFF/VIDEO switch to VIDEO.
4. Press the REW button and the tape stops at approximately where you reset the linear time counter. This feature works in F.FWD as well.



Setting the Date and Time

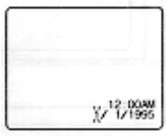
Take the time to set the date and time now. The time backup battery is rechargeable. Charge the backup battery every two months. Set the CAM/OFF/VIDEO switch on the camera/recorder to OFF and connect a charged battery or the AC adapter/charger to the camcorder for 24 hours. If you record the date and time at the beginning of each recording session they will serve as a handy reminder when viewing tapes at a later date. Make sure that the current time is displayed correctly before you start filming.

Note: The backup battery should be charged every two months. If it is not charged periodically, it will be over-discharged and its life will be shortened.



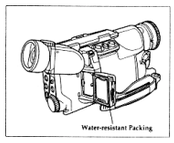
1. Load the battery ("Loading Batteries: Camera/Recorder Battery" p.19)
Press the red button on the CAM/OFF/VIDEO switch as you slide it to

CAM.
2. Press the DATE button and look into the viewfinder. The date and time should appear in the lower right with the "1" flashing.



3. Pressing the F.FWD button gives you higher numbers while the REW button gives you lower numbers. Select the right month and press STOP button. Use the F.FWD, REW and STOP buttons to select the proper day, year, hour, minute, and AM or PM.

4. After setting the AM/PM, press the DATE button. The display changes and the internal clock starts.



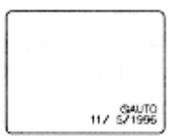
Note: The date/time graphics will be recorded whenever they appear in the viewfinder.

Correcting the Date and Time

1. Press the DATE button while pressing the STOP button. The flashing cursor appears at the month.
2. Move to where you need to make correction with the STOP button and use F.FWD and REW to correct.
3. Press the DATE button to set the corrected date and time.

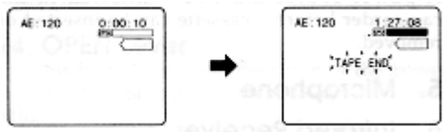
Automatic Date Recording

This feature records the date automatically once a day. After you begin recording, the date is displayed and recorded automatically for 10 seconds. The same date is recorded again in the following cases; when the cassette is replaced, when " AUTO" is displayed again after being switched to the date display and when the recording is less than 10 seconds long.
If the date changes while recording continues over 10 seconds, the date is recorded for 10 seconds when recording is restarted after the camcorder has been set to the standby once.
Press the DATE button until " AUTO" and the date appear at the lower right of the viewfinder before you begin to record. The date will be recorded whenever it appears in the viewfinder.



Remaining Tape

The tape remaining display shows the remaining tape that can be used for recording and playback, using seven dashes. This feature is handy when recording since it lets you know how long you can record on the loaded tape.



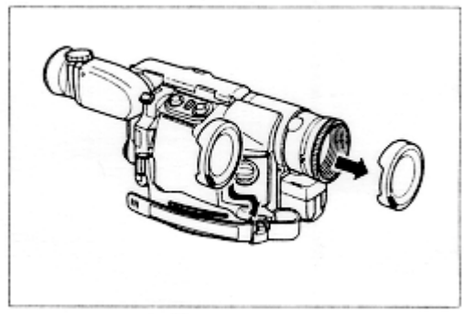
Insert a cassette into the camera/recorder and start recording or playback; 10 seconds later, the remaining tape will be displayed. When the cassette is ejected, the display will disappear. "⏀------" is displayed for 10 seconds after the tape starts to run.

Note: The tape remaining display appears 10 seconds after the tape starts to run.

Note: When the remaining tape time becomes less than about three minutes, TAPE END flashes in the viewfinder.

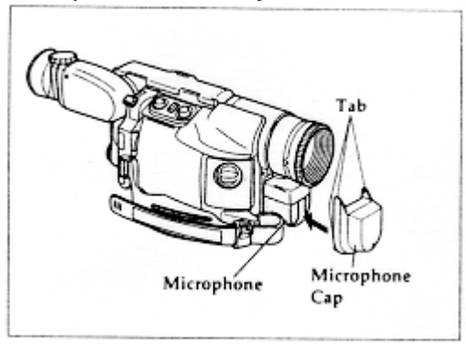
Lens Cap

Attach the lens cap to protect the lens when carrying or storing the camera/recorder. During shooting attach the lens cap as shown in the figure to prevent it from being lost.



Using the Microphone Cap

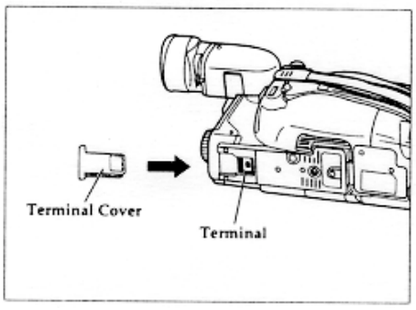
Be sure to attach the microphone cap if you rinse the camera/recorder with water after using it. If water pressure is applied to the microphone directly, it could cause damage to the microphone.
Position the microphone cap as shown in the figure and put it on the microphone securely until a click is heard.



Attaching the Terminal Cover

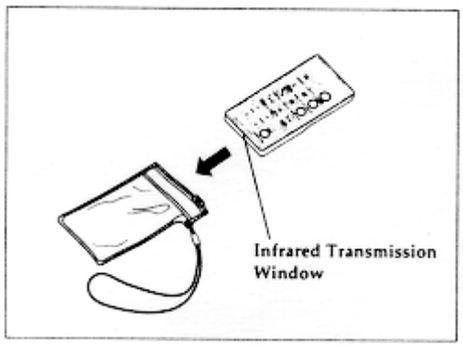
The terminal cover protects the terminal at the bottom of the camera/recorder from damage, dirt, dust, etc.
Attach the terminal cover if you are not using the external power cord.

NOTE: Before attaching the terminal cover, check that there is no sand, water or dirt adhering to the terminal. If anything adheres to the terminal, use the brush (provided) or a soft cloth to wipe it off completely.



Using the Remote Control Bag

The remote control is not water-resistant. If you use the remote control for recording when it rains or snows or where it could be splashed by water, insert the remote control into the bag with the infrared transmission window forward as shown in the figure. You can use the remote control while it is in the bag.



Getting Started - Identifying Controls

Left front / Rear view of Controls

1. Lens
F1.8 (5~60mm) 12:1 power zoom lens with auto focus and auto iris functions.

2. Snap
Look the snap to close the case tightly before recording so that no water droplets or sand can get inside.

3. Diopter Control
To use the electronic viewfinder, turn this control for you optimum focus adjustment.

4. FADE Button
The FADE button features three modes; white fade, wipe fade, and zoom fade ("Using Fade," p. 41).

5. EIS (Electronic Image Stabilizer) Button
EIS corrects slight shaking of an image ("Using the Electronic Image Stabilizer," p.40).

6. Stereo Microphone
Sensitive to sounds coming from the direction in which the camera is pointed.

7. Infrared Receiver
The area where infrared signals from the wireless remote are received. Aim the remote control to this area for best results.

8. Record/In-Camera Battery Charge Indicator
This indicator lights (red) when the camera/recorder is recording and lights (green) when the battery inside the camera/recorder is being charged.

9. F.FWD button
Use this button to fast forward tapes or for visual search. During visual search the camera/recorder fast forwards at approximately 9 times normal playback speed. Also use this button to set date and time.

10. DATE Button
Use this button to record the date and time on your tape. Any time that the date and time display is in the viewfinder they are recorded on your tape.

11. FOCUS Select Button
Press this button to select manual or automatic focus. When using manual focus, FOCUS appears in the viewfinder. When FOCUS is not displayed, focusing is automatic.

12. Focus Control
For manual focusing, rotate this control to bring the subject into focus.

13. B.LIGHT Button

When the subject is lit from behind, press and hold this button to compensate for the backlighting.

Right side / Battery compartment / Jack cover Illustration

14. 16x9 Button
Press to fade the top and bottom of the picture to black.

15. STOP Button
Use this button to stop playback, fast forward, or reverse. Also use this button to set date and time.

16. PLAY Button
Use to playback recorded tapes.

17. REW Button
Use this button to fast rewind tapes or for visual search. During visual search the camera/recorder rewinds at approximately 7 times normal playback speed. Also use this button to set date and time. Furthermore, use this button to review the last few seconds of the tape you are recording.

18. CAM/OFF/VIDEO Power Switch
Hold down the red button as you slide the switch to CAM or VIDEO. You do not need to hold down the red button to slide the switch to OFF.

19. Power Zoom Switch
Use this to zoom automatically ("Using the Power Zoom," p. 38). Pressing the power zoom switch strongly results in rapid zooming and pressing it lightly results in slow zooming.

20. INST. ZOOM (Instant Zoom) Button
Use this button to magnify the image being recorded 1.5 times momentarily.

21. AV IN/OUT Jack (Behind the jack cover)
Use this jack to connect the camera/recorder to a VCR or television ("Playing Back Your Recordings," p. 33, "Dubbing from the Camera/recorder to a VCR," p. 46 and "Recording Television Programs," p.55).

22. EXT MIC or Remote Jack (Behind the jack cover)
Connect an external microphone (not supplied) here to record sound from the external microphone. Also connect the edit remote control here.

Note: Connecting an external microphone automatically switches off the built-in microphone.
Note: If you use a monaural microphone, the sound is recorded only on the left channel.
Note: Disconnect the external microphone from the camera/recorder when you are not using it.

23. Hand Strap
Refer to page 30.

Open case / Underside Illustration

24. Start/Stop Button

When the CAM/OFF/VIDEO switch is in CAM and the record mode select switch is in the START/STOP position, press this button to start recording. When pressed a second time the camera pauses.
When the record mode select switch is in the HOLD TO REC, records while the Start/Stop button is held depressed and it enters the record pause mode when the button is released.
During playback use this button to stop the tape temporarily. Pressing a second time resumes normal playback.

25. BATT EJECT (Battery Eject) Lever
Slide this lever to open the battery compartment cover when loading a battery and removing it.

26. Power Supply Attachment
Load the battery (provided) here.

27. Battery Release Lever (blue)
Press this lever to remove the battery from the camera/recorder.

28. Cassette Holder
A power source must be connected to the camera/recorder before a cassette can be inserted or removed.

29. EJECT Button
A power source must be connected before cassettes can be inserted or removed though the CAM/OFF/VIDEO switch may be set to OFF ("Inserting and Removing Cassettes," p.21).

30. Record Mode Select Switch
START/STOP: Pressing the Start/Stop button alternates between recording and recording pause.
HOLD TO REC: The camera/recorder is set to recording while the Start/Stop button is held depressed and it enters recording pause when the button is released.

31. External Power Attachment Section
Attach the external power cord (provided) here.

32. Tripod Mounting Threaded Socket
Use this threaded socket to mount the camera/recorder to a tripod.

Remote Control Illustration

33. TV Control Buttons
Used for controlling the TV.
POWER: Turns the TV on and off.
AVX: Used for recording picture and sound from an auxiliary input.
VOLUME: Increase (▲) or decrease (▼) the volume.
CHANNEL: Top (▲) button switches to the next higher channel, bottom (▼) button switches to the next lower channel. For these to operate, you must have preset your channels. ("Controlling Your TV with the Camera/recorder's Remote" p.52).

34. Camera/Recorder Remote Control
The shaded buttons on the remote control have the same functions as the corresponding buttons on the camera/recorder.

35. Zoom Switch
This switch performs zooming electrically.
W: Picture becomes wider gradually.

T: Picture becomes telescopic gradually.

Note: The zoom switch on the remote control cannot change the zoom speed, but provides only low-speed zooming.

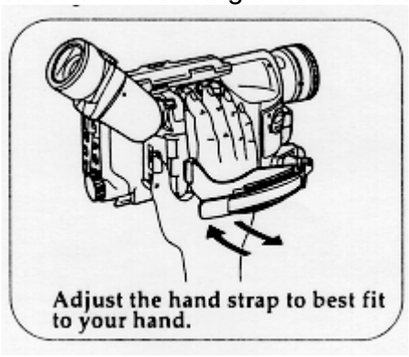
36. S.EDIT (Syncrho Edit) Button (only on the remote control)
Use this button to activate the synchro edit function for dubbing ("Using Synchro Edit," p. 47).

37. COUNTER RESET Button (only on the remote control)
Use this button to reset the linear time counter to 0:00:00.

38. TITLE ON/OFF Button (only on the remote control)
Use this button to create and record titles for your tapes ("Creating and Recording Titles," p. 44).

39. DISPLAY Button (only on the remote control)
Use this button to select the viewfinder and TV display ("Using the Display Button," p.23).

40. AV DUB Button (only on the remote control)
Use this button to record new audio and video over existing audio and video over existing audio and video.



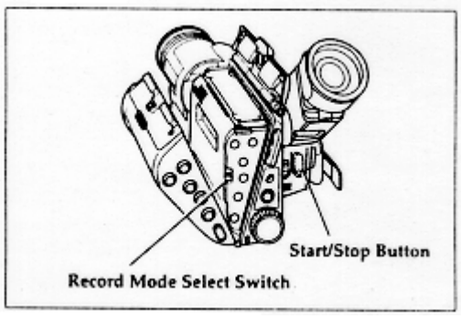
Basic Techniques

The batteries are in place and charged, the date and time are set, and you are familiar with the controls it's time to make a recording. Basic recording is easy and simple. Hooking up the camera/recorder to your TV is not complicated but give yourself plenty of time to ensure connections are correct.
This section guides you through basic recording and playback. Practice the basic techniques of recording and playback on something unimportant such as traffic or a short tour of your backyard. Once familiar with how the machine works you can move to the more sophisticated features with less stress.
Let's get started!

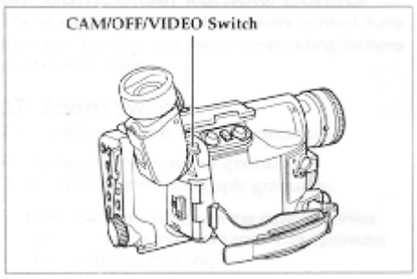
Making a Basic Recording

The Hitachi VM-H71A uses PROGRAM AE auto exposure that automatically selects the optimum shutter speed (either 1/60, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000, or 1/4000 of a second). The iris adjusts automatically in response to shutter speed.

1. Connect the camera/recorder to a power source ("Loading Batteries; Camera/Recorder Battery," p 19, "Using Alternative Power Sources," p. 20).
2. Open the case ("How to Open and Close the Case", p.10).
3. Set the record mode select switch to "START/STOP". Refer to "Holding Button to Record" below for the "HOLD TO REC" position.



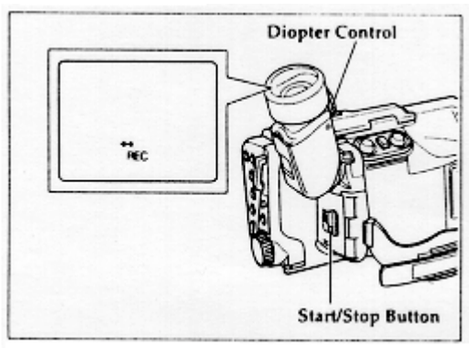
4. Insert an 8mm cassette ("Inserting and Removing Cassettes," p.21).
5. Close the case.
6. Press the red button on the CAM/OFF/VIDEO switch as you slide it to CAM. (▮▮) appears and the camera/recorder is now ready to record.



7. Use the diopter control to match the viewfinder's focus with your eyesight.
8. To record press the Start/Stop button. REC appears in the viewfinder and the camera/recorder records the picture you see in the viewfinder.

Note: Press the projection on the Start/Stop button to engage the button.

Note: TAPE flashes in the viewfinder when the tab on the side of the cassette is completely visible.



9. To stop recording press the Start/Stop button and REC disappears from the viewfinder replaced by (⏸). This places the camera/recorder in standby.

Note: TAPE END flashes in the viewfinder when about 3 minutes or less remain of the tape cassette.
Note: If the camera/recorder is left in record/pause mode for more than 5 minutes, the camera/recorder turns off automatically. To restart it press the Start/Stop button and the camera returns to record/pause mode.

Holding Button to Record

1. Set the record mode select switch to "HOLD TO REC" before starting recording.
2. Press the Start/Stop button and hold it. The camera/recorder records while the Start/Stop button is held depressed and enters the record pause mode when the button is released.

Note: Switch the record mode in modes other than recording.

Playing Back Your Recording

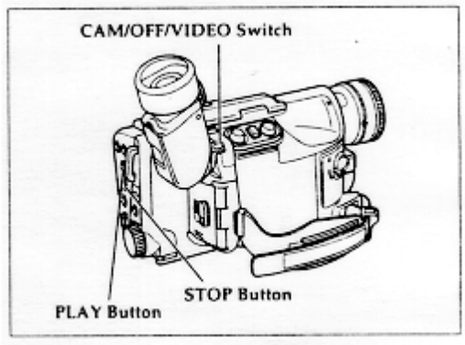
Depending on the setup of your video equipment, you connect the camera/recorder in one of the 3 methods explained below.

Connecting to a Television with a VCR Attached

1. Connect the provided AV stereo output cord to the AUDIO IN and VIDEO IN jacks of your VCR. Connect either the right or left audio plug into your VCR if it has only one AUDIO IN jack.

Note: Some VCRs have an S-VIDEO IN jack. Connect the black S-VIDEO plug to the VCR instead of the yellow VIDEO plug.

2. Connect the free square plug to the AV IN/OUT jack of your camera/recorder.
3. Insert the previously recorded cassette into the camera/recorder.
4. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO.
5. Press the PLAY button to begin playback.
6. Press the STOP button when finished.



Connecting to a Television with Audio In and Video In Jacks

1. Connect the provided AV stereo output cord to the AUDIO IN and VIDEO IN jacks of your television. Connect either the right or left audio plug into your television if it has only one AUDIO IN jack.

Note: Some televisions have an S-VIDEO IN jack. Connect the black S-VIDEO plug to the television instead of the yellow VIDEO plug.

2. Connect the free square plug to the AV IN/OUT jack of your camera/recorder.
3. Turn on your television.
4. Insert the previously recorded cassette into the camera/recorder.
5. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO.
6. Press the PLAY button to begin playback.
7. Press the STOP button when finished.

Connecting to a Television without Audio In and Video In Jacks

1. Disconnect the VHF antenna leads from the back of the television. Leave the UHF antenna leads connected.
2. Connect the VHF antenna lead to ANT IN of the RF output adapter. If the cable on the VHF antenna lead is flat you need to purchase an antenna adapter (300-ohm to 75-ohm transformer). Connect the antenna adapter to the VHF antenna lead and slide the adapter on to the ANT IN

terminal.
3. Connect the 75-ohm coaxial cable of the RF output adapter to the VHF antenna terminals on the back of the television. If the television is set up to connect to a flat antenna lead you need to purchase antenna adapter (75-ohm to 300-ohm transformer). Connect the adapter to the 75-ohm coaxial cable of the RF output adapter and connect the free ends of the adapter to the VHF antenna terminals at the back of your television.
4. Connect the RF output adapter cable to the AV IN/OUT jack of your camera/recorder.
5. Turn your television on and select channel 3 (channel 4 if channel 3 is a channel used in your area).
6. Select the CH3 or CH4 on the RF output adapter matching the channel selected on your television.
7. Insert the previously recorded cassette into the camera/recorder.
8. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO.
9. Press the PLAY button to begin playback.
10. Press the STOP button when finished.

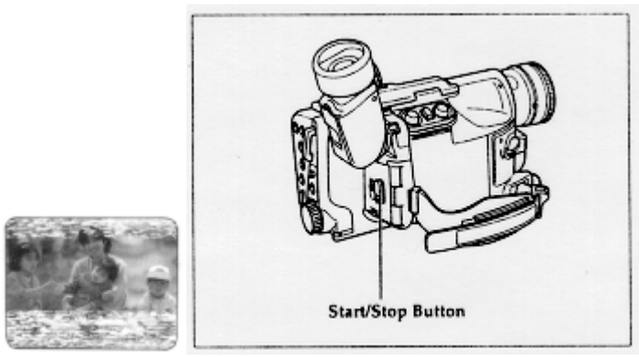
Simple Playback (Using the Electronic Viewfinder)

1. Insert the cassette ("Inserting and Removing Cassettes," p.21).
2. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO.
3. Press the PLAY button and enjoy your video.
4. Press the STOP button when finished.

Using Still

To view a still picture during playback press the Start/Stop button. Press the Start/Stop button again to resume playback. If you leave the camera/recorder in play/pause mode for more than 5 minutes the camera/recorder automatically stops the cassette to prevent damage to the tape.

Note: When you engage still mode the still picture will have some interference or noise. This is normal.



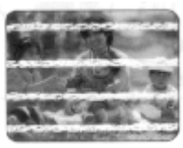
Using Forward and Reverse Search

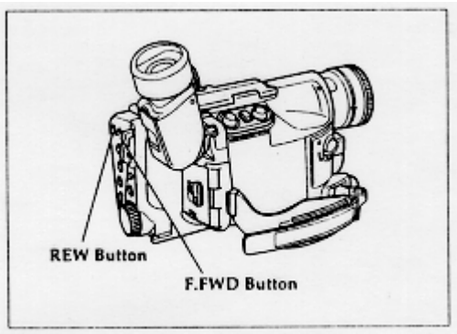
When looking for a particular point in your videotape use the F.F button and REW button to find the spot quickly.

Press F.FWD button during playback to play the tape forward at approximately 9 times normal speed. Press PLAY button to return to normal playback.
Press REW button during playback to play the tape backwards at approximately 7 times normal speed. Press PLAY button to return to normal playback.

Note: When you engage F.FWD button or REW button the picture will have

some interference or noise. This is normal during search mode.



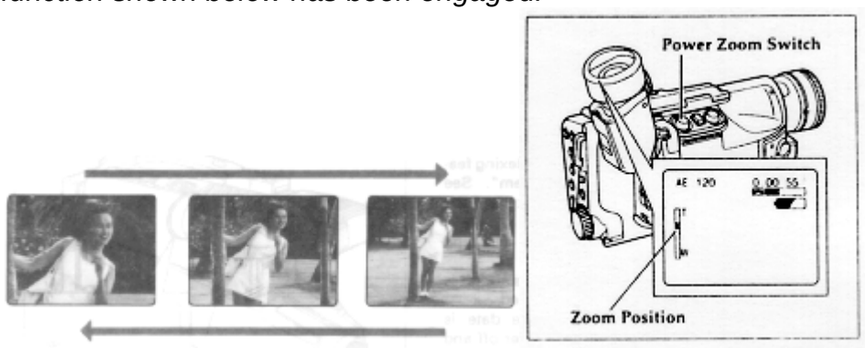


Advanced Techniques

The Hitachi VM-H71A offers a diverse group of features that add interest and excitement to your video. Adding fades to smooth transitions creates videos with a professional look.
As you learn and practice with these features think of situations that they might fit in and add a special touch.

Using the Power Zoom

The power zoom W control widens the picture, moving the subject farther away, while the power zoom T control brings the subject closer, narrowing the picture. If ZOOM appears at the left of the viewfinder, the digital zoom function shown below has been engaged.

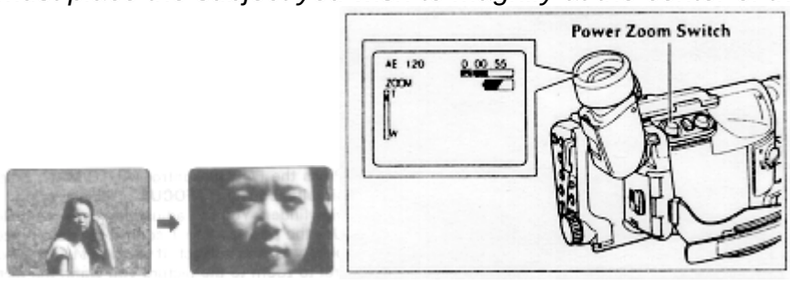


When the power zoom switch is operated, the zoom position is displayed in the viewfinder for about 5 seconds and then disappears. The zoom position is displayed in 10 steps.
Pressing the power zoom switch strongly results in rapid zooming and pressing it lightly results in slow zooming.

Note: You can use the zoom switch on the remote control though it provides only low-speed zooming; it cannot change the zoom speed.

Using the Digital Zoom

The digital zoom increases the magnification of the optical zoom. You must place the subject you wish to magnify at the center of the viewfinder.



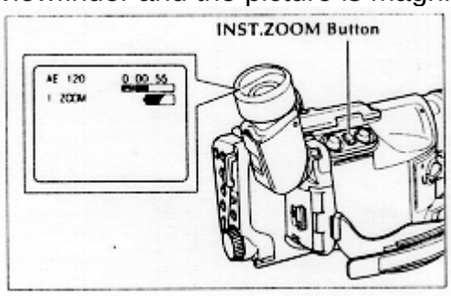
Note: This digital zoom has certain limitations and may degradate at extreme magnification and amplify camera/recorder's movement.

Press and hold the power zoom T control until you find the picture you want. You control the zoom with the power zoom T and W controls. When ZOOM is not displayed in the viewfinder, normal zoom functions resume.

Using the INST. ZOOM (Instant Zoom) Button

The instant zoom feature activates the digital zoom to magnify the subject 1.5 times regardless of zooming engaged by the power zoom T and W controls.

Press the INST. ZOOM button. I. ZOOM appears at the left of the viewfinder and the picture is magnified 1.5 times momentarily.



Note: To return to the original zoom position, press the INST. ZOOM button so that I. ZOOM disappears from the viewfinder.
Note: This instant zoom has certain limitations and may degradate at extreme magnification and amplify camera/recorder's movement.

Using Auto Focus

The camera/recorder focuses the subject in the center of the viewfinder automatically unless the manual focus is engaged. If FOCUS appears in the viewfinder, manual focus is engaged. Press the FOCUS select button to return to auto focus.

Good

No good

The auto focus will not work under the following conditions and you must focus manually:

Objects outside the center of the viewfinder

Objects at different distances in the center of the viewfinder

Brightly lit objects such as a neon light, objects lit by spotlight, etc.

Objects behind water dappled or dusty glass

Objects with little difference in light reflection such as a white wall

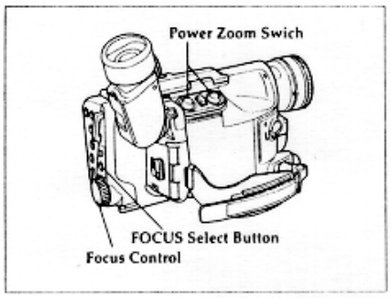
Rapidly moving objects

Dark objects

Note: With the T zoom control you can use the auto focus with subjects that are 3.6 feet away from the lens and further away to infinity. With the W zoom control you can use the auto focus with subjects 1.2 inches away from the lens and further away to infinity.

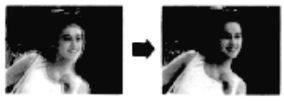
Using Manual Focus

1. Press the FOCUS select button. FOCUS displays in the viewfinder. You can adjust the focus manually.
2. Use the power zoom T control to zoom up completely to your subject. If you don't use the T control to zoom to the picture you want, the picture may fall out of focus when actual recording starts.
3. Turning the Focus control until the subject is in focus.
4. Use the power zoom W control to zoom back to the picture you desire.



Note: To return to auto focus press the FOCUS select button and the FOCUS disappears from the viewfinder.

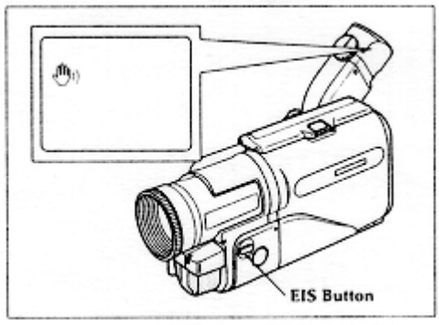
Using the Electronic Image Stabilizer



The electronic image stabilizer (EIS) corrects slight shaking of the image being recorded and is effective in the following situations.

While you zoom to a distant subject.
While you approach a small subject.
While you walk around.
While you record from inside a moving vehicle.

1. Press the EIS button. The EIS icon appears in the viewfinder.



2. Press the Start/Stop button to start recording. When EIS is engaged the viewfinder image shakes with a slight delay.

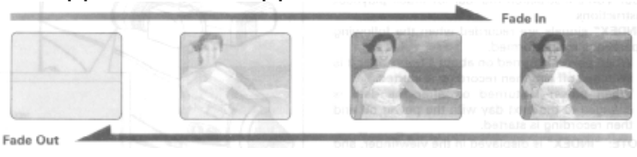
Note: EIS may not function you use a wide or teleconverter lens.
Note: It is recommended that you do not use the EIS function when using a tripod. The sensor would detect vibrations from the tripod in which case the picture would be blurred.

Using Fade

Use the fade feature to add a professional touch to your recordings. Use the FADE button to select one of the three fade options.

White fade: Fades in from a white screen or fades out to a white screen.

appears in the upper left corner of the viewfinder.



Wipe fade: The picture opens gradually from the center of a black screen or closes into the center to a black screen. appears in the upper left corner of the viewfinder.

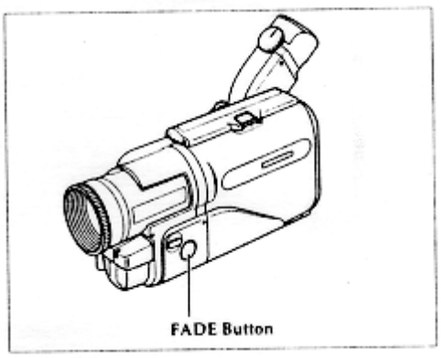
Zoom fade: Fades in while zooming from a white screen or fades out while zooming to a white screen. appears in the upper left corner of the viewfinder.

Fading In

1. Use the FADE button to select a fade option before recording.
2. Press the Start/Stop button to start recording; fade begins automatically.

Fading Out

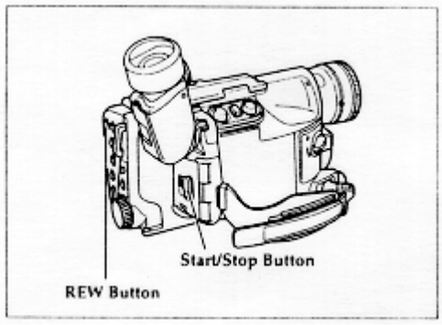
1. While recording with the camera/recorder use the FADE button to select a fade option.
2. Press the Start/Stop button to stop recording; the fade begins automatically and REC flashes until the fade ends.



Note: When fading out be sure to wait until the PAUSE indicator (⏸) is visible in the viewfinder before attempting to put the camera/recorder into the record mode again.

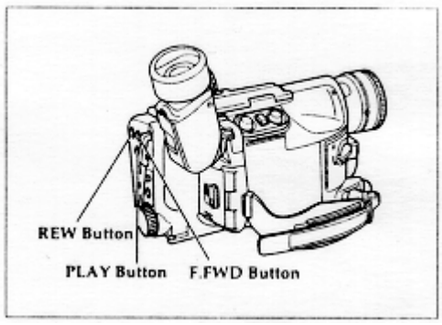
Using Instant Review

Use this feature to view the last few seconds of the tape you shot.
1. Set the camera/recorder to record/pause mode and tap the REW button. The last few seconds of tape play back in reverse and then in normal playback mode.
2. The camera plays back to the spot where you paused and returns to record/pause mode (standby). Press the Start/Stop button to resume recording.



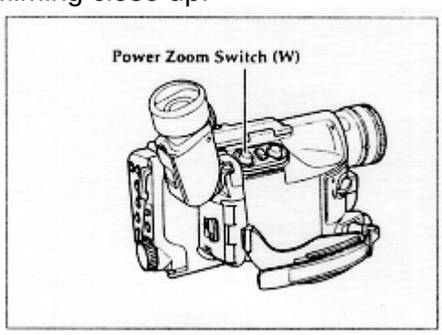
Using Quick Edit

Use quick edit to search for the end of previously recorded material, find a particular spot on your tape, begin editing, or record new material. While the camera is in record/pause mode hold down the F.FWD, REW, or PLAY button and visually search the tape. Release the button and the camera/recorder stops the tape at the exact position you selected.



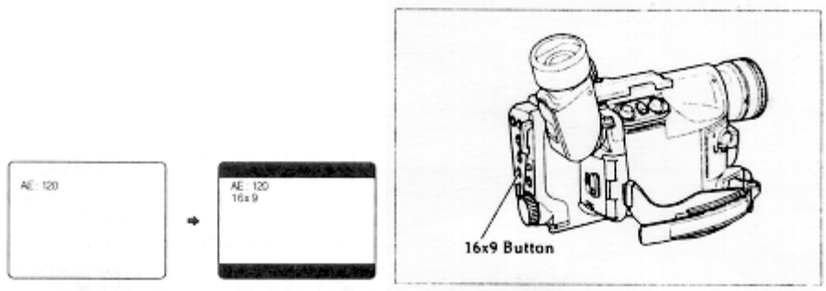
Using Macro

This function allows you to shoot subjects as close as 1.2 inches. Press and hold the power zoom control W. The camera focuses on the subject automatically. Check your lighting as it tends to be insufficient when filming close up.



Using 16x9

Pressing the 16x9 button during recording or recording pause fades the top and bottom of the picture in the viewfinder to black.



"16x9" is displayed in the viewfinder.

When the 16x9 button is pressed again, "16x9" disappears and the normal picture is restored.

Using the Wireless Remote Control

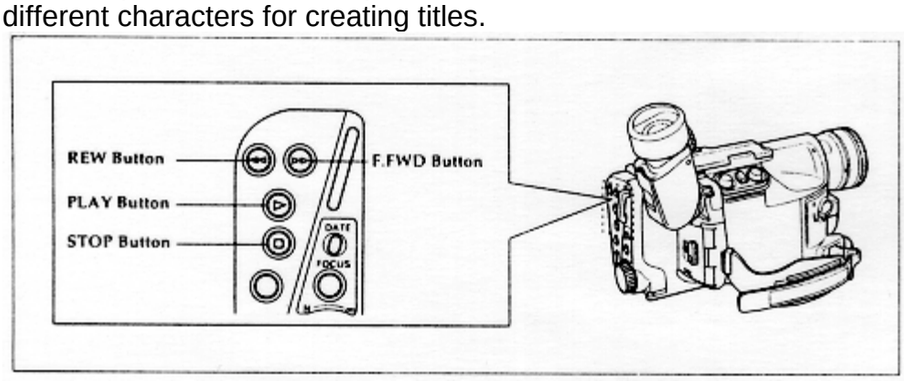
Use the wireless remote control to operate the camera/recorder from a distance. The PLAY, F.FWD, REW, STOP, PAUSE (START/STOP) and ZOOM buttons on the wireless remote control operate the functions of the corresponding buttons on the camera/recorder. Aim the wireless remote control at the infrared ray receiver of the camera recorder.

Using Remote Control Illustration

Note: Use the wireless remote control within the range of the infrared ray receiver of the camera/recorder shown above.
Note: The wireless remote control may not function in strong light such as direct sunlight or very bright artificial lighting.
Note: Clear a direct path from the wireless remote control to the infrared ray receiver. The wireless remote control won't work if an obstacle blocks the infrared rays.
Note: The remote control code of this camera/recorder is Hitachi code VCR2. If you have a VCR with the same code your Hitachi VCR may malfunction when you use the camera/recorder's wireless remote control.
Note: The remote control cannot be used to operate the camcorder when the microphone cap is left attached.

Creating and Recording Titles

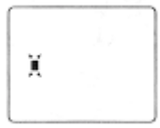
Create titles easily and personalize your recordings while keeping a permanent visual record of what is contained on a tape. The camera/recorder can store 2 different titles in its memory. A title stored in memory can be displayed and recorded at any time. A title contains two lines of up to 16 characters per line. The camera/recorder contains 47 different characters for creating titles.



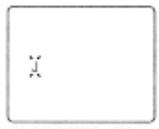
Creating a Title

1. Connect the camera/recorder to a power source.
2. Hold down the red button on the CAM/OFF/VIDEO switch and slide it to

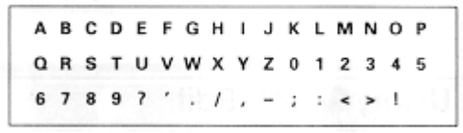
either CAM or VIDEO.
3. Press the TITLE ON/OFF button on the remote control and a flashing cursor appears in the viewfinder.



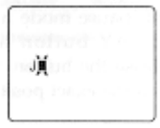
4. Use the STOP button to place the cursor where you wish to begin your title.
5. Use the F.FWD and REW buttons to select the first character of your title.



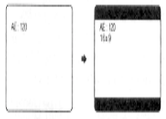
Characters available for your title.



6. Once you've selected a character press the STOP button to set it.



7. Complete the title by repeating steps 5 and 6.



8. When you complete your title, press PLAY to create a second title as required, or press the TITLE ON/OFF button on the remote control to store the title in memory and remove the title graphics from the viewfinder.

Note: As long as the correct current time can be displayed, the title is held in memory.

Correcting Errors

1. Press the TITLE ON/OFF button on the remote control.
2. Select the title with the PLAY button.
3. Use the STOP button to select the character to be corrected.
4. Use the F.FWD and REW buttons to correct the character.
5. Press the TITLE ON/OFF button on the remote control to store the corrected title in memory.

Recording Titles on a Tape in the Camera/Recorder

1. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to CAM.
2. Locate the point of the tape where you wish to record the title ("Using Quick Edit," p.42).
3. Press the TITLE ON/OFF button on the remote control.
4. Use the PLAY button to select the title you wish to record.
5. Press the Start/Stop button to start recording the title.
6. Press the TITLE ON/OFF button on the remote control to stop recording the title. The title graphics disappear from the viewfinder and the camera/recorder can record normally.

Note: Create and store your title before an event you plan to record. Just press the TITLE ON/OFF button on the remote control to superimpose the title over the scene as you record it. This method avoids erasing previously recorded material which will happen when you record a title on a previously

recorded tape.
Note: Title recording is disabled when you connect the optional AV input cable to the AV IN/OUT jack to record video and audio from the television or VCR.

Recording a Title while Transferring a Tape

1. Connect the camera/recorder to the VCR (p.33).
2. Press the TITLE ON/OFF button on the remote control to turn title on.
3. Use the PLAY button to select a title from memory.
4. Press the TITLE ON/OFF button on the remote control to turn title off.
5. Turn on the VCR and set it to record. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO. Press PLAY on the camera/recorder.
6. Press the TITLE ON/OFF button on the remote control at the point on the tape where you wish to record the title.
7. Press the TITLE ON/OFF button on the remote control again to stop recording the title.

Note: Recording the title during tape transfer will erase a portion of your recorded material.

Dubbing from the Camera/Recorder to a VCR

Connect the camera/recorder to a VCR to copy your or a friend's home 8mm recordings to VHS.
Camcorder to VCR connection Illustration

1. Connect the AV stereo output cord plug to the AV IN/OUT jack of your camera/recorder.
2. Connect the AV stereo output cord to the AUDIO IN and VIDEO IN jacks of your VCR. Connect either the right or left audio plug into your television if it has only one AUDIO IN jack.

Note: Some VCR's have an S-VIDEO IN jack. Connect the black S-VIDEO plug to the VCR instead of the yellow VIDEO plug.

3. Hold down the red button of the CAM/OFF/VIDEO switch while you slide the switch to VIDEO.
4. Insert the recorded tape in the camera/recorder and a blank tape into the VCR. Set the VCR to record.
5. Play the tape from the camera/recorder while recording on the VCR.

Note: If the VCR is connected to a television and the VCR/TV selector is set to VCR, you can monitor the tape being dubbed.

Using Synchro Edit

Use synchro edit to record only segments of a previously recorded tape when dubbing from the camera/recorder to a VCR. This requires an optional synchro edit cable. The Hitachi VM-H71A uses a flying erase head to eliminate glitches or rainbow noise that sometimes occurs

between edits. Your VCR must have the EDIT IN jack to use the synchro edit.
Synchro Edit hookup Illustration

1. Connect the synchro edit cable to the AV IN/OUT jack of your camera/recorder.
2. Connect the synchro edit cable to the AUDIO IN, VIDEO IN, and EDIT IN jacks of your VCR. Connect either the right or left audio plug into your VCR if it has only one AUDIO IN jack.

Note: Some VCR's have an S-VIDEO IN jack. Connect the black S-VIDEO plug to the VCR instead of the yellow VIDEO plug.

3. Insert the recorded tape in the camera/recorder and a blank tape into the VCR.
4. Play the tape in the camera/recorder until you find the place you want to record. Press the Start/Stop button.
5. Press the RECORD button on the VCR. It automatically sets to pause. If the VCR begins to record instead of pausing you need to change the position of the polarity switch on the synchro edit cable. Stop the VCR, change the position of the polarity switch, and press the RECORD button on the VCR.
6. Press the S.EDIT button on the remote control and the last few seconds of the recorded tape reviews in the viewfinder and then the camera/recorder is placed in playback. The recording VCR starts recording automatically.
7. Press the F.FWD, REW, STOP and Start/Stop buttons to pause the VCR. You can then search forward or back through the tape without affecting the tape in the VCR.
Use the F.FWD and REW buttons to search the tape. Press the PLAY button to resume normal playback. To resume recording on the tape in the VCR, press the Start/Stop button and then the S.EDIT button.
To fast forward or rewind the tape, press the STOP button, then F.FWD or REW. To return to recording on the tape in the VCR, press the STOP button, then the PLAY button, then the Start/Stop button, and then the S.EDIT button.
8. To stop recording at a certain point turn on the camera/recorder's linear time counter with memory ("Using Memory," p.23). Press the COUNTER RESET button on the remote control where you wish the recording to stop. The linear time counter resets to 0:00:00M. Rewind to the point where you wish to start recording and start copying. When the linear time counter reaches 0:00:00 the recording stops automatically, pausing the VCR in the record mode.

Note: If the tape counter reads "0:00:00M" you cannot start recording.

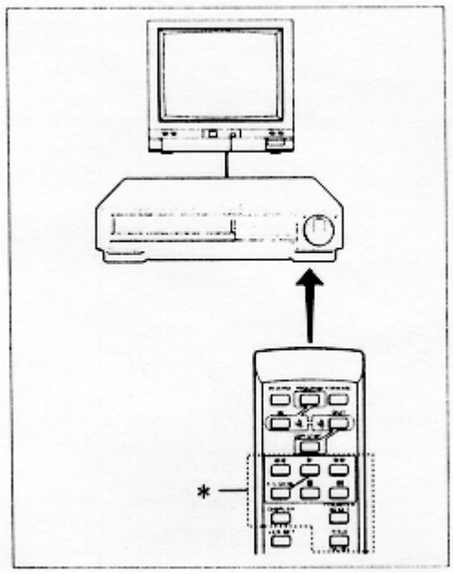
Simple Programmable Edit

Simple programmable edit allows you to program your camera/recorder to select the scenes you want to copy from a pre-recorded tape. Use the edit remote control (provided) to easily copy scenes from a recorded tape in the camera/recorder (playback machine) onto a blank tape in a table-top VCR which handles infrared remote signals (recording machine).

Programmable Edit Illustration

Programming the Remote Control for the VCR

It is necessary to program the edit remote control code to match the VCR before starting editing.



1. Turn the VCR on.
2. Aim the remote control at the infrared receiver on the VCR and press the VCR SET button on the remote control and hold it, then press the button corresponding to the VCR's maker code. For example, if you ave a RCA VCR, press the VCR SET button and hold it, then press the DISPLAY button. To check whether the remote control code matches that of your VCR or not, point the remote control at the infrared receiver on the VCR and press the VCR SET button and hold it. If the remote control code has been set, the VCR channel is counted up automatically.

Note: Your VCR should have an infrared remote control.
Note: If the channel on the VCR does not change with the above operation, you need to switch the remote control code of your VCR. Refer to the VCR's instruction manual. If the channel still does not change after you have changed the VCR's remote control code, the edit remote control cannot operate your VCR.

VCR Brands	**Press VCR SET and This Button**
Hitachi	REVERSE
Sony	PROGRAM
Panasonic	FORWARD
Toshiba	IN
Mitsubishi	COPY START
Sanyo	OUT
Sharp	◀◀
NEC	▶
JVC	▶▶
Akai	A/V DUB
Gold Star	■
PHILIPS	▮▮
RCA	DISPLAY
Zenith	COUNTER RESET
Magnavox	TITLE ON/OFF

Note: The remote control code is held in memory until it is changed or the batteries are replaced.

Note: Point the remote control straight at the VCR's infrared receiver for operation.
Note: Use the remote control indoors. When the infrared receivers of the VCR and camera/recorder are exposed to direct sunlight or strong artificial light, the remote control may not operate correctly.
Note: The remote control cannot be operated if there is an obstacle between the remote control and infrared receiver. Especially, be careful of this during dubbing.
Note: When the edit remote control is connected to the camera/recorder, the buttons marked * in the figure above perform the same operations as those of the other remote control provided.

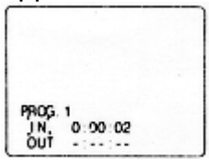
Operation

You can select up to four different scenes or segments to be copied at one time.

Note: If sunlight or strong artificial light strikes the camera/recorder's infrared receiver, the editing operation may not be possible. In this case, attach the microphone cap to cover the receiver, then try to operate the edit remote control again.

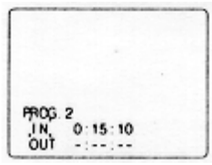
Programmable Edit Hookup Illustration

1. Use the AV stereo output cable to connect the camera/recorder and VCR as illustrated and then connect the edit remote control to the camera/recorder.
2. Insert a recorded tape into the camera/recorder.
3. Set the CAM/OFF/VIDEO switch of the camera/recorder to VIDEO. Turn the recording VCR on and select line input.
4. Press the PROGRAM button of the remote control. The program display appears in the viewfinder.



Note: If your VCR is connected to a TV, the program display will also appear on the TV screen.

5. Press the ▶ button and use the ▶▶ or ◀◀ button to search for the starting point of the segment you want to copy. Press ▶ and then ❚❚ to set the camera/recorder to the play pause mode.
Use the FORWARD and REVERSE buttons in the play or pause mode to fine adjust the tape position. Press FORWARD and hold it; the tape is played while the button is held. Press REVERSE and hold it for reverse play.
6. Press the IN button to store the counter reading. When you press the IN button, OUT flashes in the program display.
7. Press the ▶▶ button to search for the end of the segment you want to copy. Press ▶ and then ❚❚ to set the camera/recorder to the play pause mode. Use the FORWARD or REVERSE button as required to fine adjust the tape position.
8. Press the OUT button to store the counter reading at the end of the scene.



9. Continue programming as described above until you have entered up to four different segments.
10. Load a blank tape, then set the VCR to the record pause mode.
11. Point the remote control at the receiver on the VCR and press the COPY START button to start simple programmable edit.
The camera/recorder automatically searches for the beginning of the first segment and starts playback. The recording VCR automatically starts recording.
After recording the first segment, the camera/recorder automatically searches for the beginning of the next segment and resumes playback. The recording VCR is automatically released from the record pause mode and resumes recording.
It continues recording and pausing until all the programmed segments are edited.

12. When simple programmable edit is finished the camera/recorder will enter the stop mode, and the VCR will enter the record pause mode.

Note: After the simple programmable edit is finished, the programmed data is erased. If you want to continue editing other segments, repeat steps 5 ~ 12.
Note: If you make a mistake in the middle of programming or want to correct the programmed data, start again from the beginning.
Note: Most VCRs (recording machine) may be released from the record pause mode if it continues for more than five minutes.
Note: The dubbing start and end positions may slightly drift from the specified positions when certain VCRs are used.

To End Programmable Simple Edit

Press the PROGRAM button to remove the program display from the viewfinder. Then press the stop button on the recording VCR to set it to the stop mode.

Note: if the CAM/OFF/VIDEO switch of the camera/recorder is set to OFF or CAM when the recording VCR is in the record pause mode, the VCR enters the record mode.

Controlling Your TV with the Camera/Recorder's Remote

The remote control is designed to be compatible with many televisions, but will not work with every one made. If your TV does not respond the way it should when you program it as explained below, this remote may be incapable of operating it.
Once you have programmed the remote, you won't have to do it again until you change the batteries.

This remote control can be used with your TV as well as the camera/recorder, as long as your TV comes with a remote control. This feature comes in handy -- you don't have to juggle two remotes.
The remote control is compatible with the fourteen makes of TVs listed below -- but don't be alarmed if yours is not on our list. You may still be able to program the remote for your TV.
Every TV that comes with a remote control is set up to detect certain

infrared signals. You need to program the camera/recorder remote control to send signals that your TV will recognize and respond to. Here's what to do:

Programming the Remote Control

Turn the television on (any channel is okay).

Aim the camera/recorder's remote control at your TV set. Hold down the CH (▲) button while you press the button corresponding to your brand of television as shown in the chart (page 53).

For example, if you have an RCA television, press CH (▲) and DISPLAY at the same time. If this button combination sends a signal that matches with your TV, the channel will change on the TV, and you'll know the remote is set to control the television.

If that button combination does not change the TV channel, go through the whole list of button combinations one by one until you find one that does change your TV channel.

Also, if your brand of TV is not listed in the chart, try all the buttons. One of them may work for you.

If the TV channel still doesn't change after going through all the button combinations listed, it is likely that you will not be able to program this remote control for your TV.

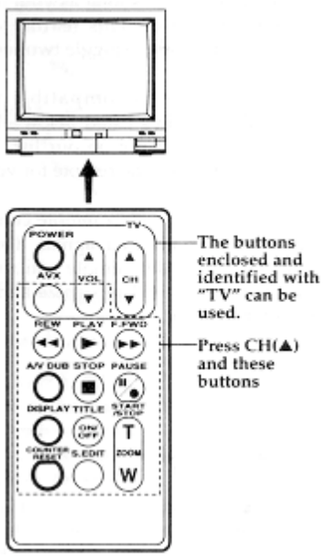
TV Brands	**Press CH (▲) and This Button**
Hitachi	AVX
Zenith	VOL (▼)
Sony	ZOOM.(W)
Magnavox	REW
Sanyo	PLAY
Gold Star 1	F.FWD
Toshiba	A/V DUB
Gold Star 2	STOP
NEC	PAUSE (START/STOP)
RCA	DISPLAY
Panasonic	TITLE ON/OFF
Mitsubishi	ZOOM.(T)
JVC	COUNTER RESET
Sharp	S.EDIT

Controlling the TV

Once programmed, the camera/recorder's remote control is ready to control the TV.

Press the button of the TV function that you want.

Be aware that not all of your TV's functions may work even though the remote control is correctly programmed.



Note: It may not be possible to control all TVs listed in this Table.
Note: The AVX Button can't be used with Gold Star 2 and Sharp TVs.

Using Audio/Video Dubbing

Use audio/video dubbing to record audio and video from the camera/recorder's built-in microphone and camera onto a previously recorded tape in the camera/recorder.
Audio/Video Dubbing operation Illustration

1. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to VIDEO.
2. Connect the provided AV stereo output cord to the AUDIO IN and VIDEO IN jacks of your television. Connect either the right or left audio plug into your television if it has only one AUDIO IN jack.

Note: Some televisions have an S-VIDEO IN jack. Connect the black S-VIDEO plug to the television instead of the yellow VIDEO plug.

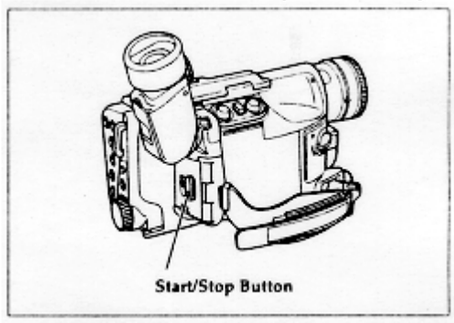
3. Connect the free square plug to the AV IN/OUT jack of your camera/recorder.
4. Insert a previously recorded tape in the camera/recorder.
5. Use the wireless remote control and press the PLAY button. Use the PLAY, F.FWD, and REW buttons to find the place where you want to stop dubbing. Press the PAUSE (START/STOP) button.
6. Display the linear timer counter with memory ("Using Memory," p.23). Press the COUNTER RESET button to set the linear time counter to 0:00:00M.
7. Use the REW and PLAY buttons to find where you wish to start dubbing. Press the PAUSE (START/STOP) button.
8. Press and hold the A/V DUB button while pressing the PLAY button. This places the camera/recorder in A/V DUB pause mode.
9. Press the PAUSE (START/STOP) button. The audio/video dubbing starts. When the linear time counter reaches 0:00:00M the camera/recorder stops automatically, recording only the portion of the tape that you selected.
Remote Control of Camcorder Illustration

Note: If the camera/recorder is in A/V DUB pause or STILL mode for more than 5 minutes, the camera/recorder stops automatically to protect the tape.
Note: Automatic date recording is disabled during audio/video dubbing.
Note: When the audio/video dubbed portion is played back, noise may appear at the end of the dubbed portion.

Recording Television Programs

If your television or VCR has AUDIO OUT and VIDEO OUT jacks you can record television programs with your camera/recorder.
Recording Television Programs Illustration

1. Connect the camera/recorder to a power source.
2. Insert a cassette in the camera/recorder.
3. Hold down the red button on the CAM/OFF/VIDEO switch while sliding the switch to CAM.
4. Connect the optional AV input cable to the VIDEO OUT and AUDIO OUT jacks of your television or VCR.
5. Connect the free plug to the AV IN/OUT jack of your camera/recorder.
6. Turn your television or VCR on and tune it to the channel you wish to record from.
7. Press the Start/Stop button to start recording the program that is on the screen of the television.
8. Press the Start/Stop button again to stop recording.



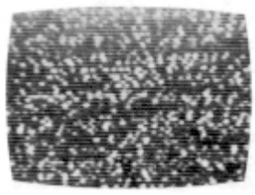
Note: If the tape is played back while the AV Input cord is left connected to the camera/recorder, noise may appear in the picture. In this event, press the STOP button to stop the camera/recorder, unplug the AV input cord and play back the tape again.

Note: To monitor the picture being recorded, connect the AV stereo output cord (provided) to the VIDEO IN jack of the television as shown above. If the AV stereo output cord is connected to the S-VIDEO IN jack, no color may appear on monitor screen.

General Maintenance

Cleaning the Camera/Recorder Heads

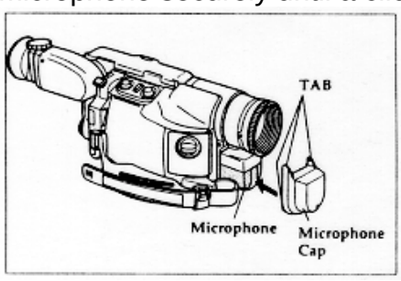
Dirt can accumulate on the video heads on the camera causing the playback picture to become blurred or appear as if video information is lost. This often means that the video heads are dirty. Use a video head cleaner such as Maxell 8M-CLT to clean the heads.
If after cleaning the heads the picture does not clear up consult your nearest dealer or VCR service center for professional head cleaning.



Maintenance And Storage after Use

How to Maintain

1. Position the microphone cap as shown in the figure and put it on the microphone securely until a click is heard.



2. Close the snap securely and wipe the case with a cloth moistened with water or wash it with tap water which is flowing gently, to remove foreign matter or salt. (Do not wash the case with water at high pressure. It could cause water to enter.) Use the brush (provided) to wipe off the sand and mud from the clearances of the case, switches, buttons, snap, etc.

Note: Remove the dirt and dust completely from the terminal section at the bottom using the brush (provided) or a soft cloth.

3. Wipe off the water on the case with a dry cloth.
4. Release the snap.
Refer to "How to Open and Close the Case" on page 10.
5. Check that there is no water droplets on the snap, open the case and dry the camera/recorder in a dark and well ventilated place.

Note: Do not dry the camera/recorder forcibly using a drier or heater.
Note: Never use cleaning chemical such as alcohol, thinner, benzine, etc.
Note: Do not rub the lens with force. The lens could be scratched.
Note: Do not lubricate the metal sections.

Storage

Store the camera/recorder in a well ventilated place, not in a place at high temperature and high humidity or in a dusty place.

Store the camera/recorder without closing the snap and with the case slightly open.

Periodic Maintenance

A precision electromechanical device, the Hitachi VM-H71A requires maintenance after a period of normal use. We expect that no other maintenance other than head cleaning will be required during the period of warranty unless the camera/recorder is used either heavily or seldom. Defective parts are covered by the warranty. Normal maintenance is the responsibility of the owner. Consult your dealer or local VCR service center for recommendations regarding normal maintenance based on your use patterns, location, and the age of the camera/recorder.

Troubleshooting

Quality is very important at Hitachi. We inspect and check every camera/recorder carefully at the factory under the most rigid quality control and inspection systems. If problems develop please check the following possible solutions before inquiring about professional service.

INSERTING OR REMOVING THE CASSETTE

Symptom	**Check Point & Correction**
Cassette holder cannot be opened when you push EJECT button.	* Connect the power source
Cassette cannot be inserted into cassette compartment.	* Load cassette in direction indicated by arrow on cassette.
	* Cassette window must be toward outside.

CAMERA RECORDING

Symptom	**Check Point & Correction**
Picture does not appear in the viewfinder	* Remove the lens cap. * Slide the CAMERA/OFF/VIDEO switch to CAM. * Disconnect the AV input cable from the camera/recorder.
The camera/recorder cannot go into the recording mode, even when the start/stop button is pressed.	* Check the record-protect tab on the cassette. See page 22 for details.
	* Push the cassette holder embossed PUSH to close it.
	* Slide the CAM/OFF/VIDEO switch to CAM.
Picture is out of focus.	Make sure that FOCUS does not appear in the viewfinder.
Auto-focus does not operate.	.If it is displayed, press FOCUS button to erase it.
	* Auto-Focus does not operate if a special-effects filter is attached or the objects shown on page 39
	are being recorded.

RECORDING TV PROGRAMS OFF THE AIR

Symptom	**Check Point & Correction**
The camera/recorder cannot be set to the	* Check the record-protect

tab on the recording mode, even when cassette. See page 22 for details.
the Start/Stop button on the * Set the
CAM/OFF/VIDEO switch camera/recorder is pressed. to
CAM.

PLAYBACK OF PRE-RECORDED CASSETTE	
Symptom	Check Point & Correction
“PLAY” button cannot be engaged.	Set the power switch to “VIDEO” position.
No picture appears on television screen when “PLAY” button is pressed.	Set the television to the camera/recorder channel (3 or 4) depending upon the selected channel in the RF channel select switch of RF output adapter. (TV is connect to the camera/recorder by using RF output adapter.)
Interference on playback picture.	When you see the playback picture on yourTV, adjust fine tuning knob on television set to obtain best picture.
Picture bends at the top of the TV screen.	TV receiver is older type. It needs to be modified to work properly with camera/recorder.
	Tape is damaged, try another cassette.
Color of your TV screen is too bright, too faint or change.	TV set has VIR circuit. Turn off during playback.

BATTERY CONDITION	
Symptom	**Check Point & Correction**
The "▬" indication in the electronic viewfinder	Try another battery or charge the battery.

NO OPERATION IS ACCEPTED	
Symptom	**Check Point & Correction**
Power is not turned on an no button operations are accepted.	Remove the power source, and after about one minute, push the reset switch gently using a toothpick, etc. until you feel a click. The display will be reset. Then set the information again.

Specifications

General Specifications

Power requirements	7.2V DC
Power consumption	5.8W (when recording)
Dimensions	3-7/16" W x 4-5/16" H x 9" D (88mm x 109mm x 228mm)
Weight	2.0 lbs (890g) without battery pack, lens hood, lens cap or cassette
Operating temperature	32°F ~ 104°F
Storage temperature	-4°F ~ 140°F

Video Recorder Specifications

Format	8mm
Record/playback	Four video record/playback heads
Video signal	EIA standard NTSC color
Tape speed	14.3mm/sec
Video input	1.0Vp-p, 75 ohm
Video output	1.0Vp-p, 75 ohm
Audio input	-7.8dBs (316mVrms)
Audio output	-7.8dBs (316mVrms)
Fast forward/rewind time	Less than 10 minutes with P6-120 cassette

Camera Specifications

Scanning	525 lines/60 fields/30 frames
Required minimum illumination	2 lux
Pickup device	1/3" C.C.D.
Lens diameter	46mm

For U.S.A. only

HITACHI
Service Hotline
To locate an authorized
HITACHI service facility
in the continental U.S.A.
DIAL TOLL FREE
7 days a week, 24 hours a day
800 HITACHI
1-800-448-2244

Hitachi Home Electronics (America), Inc.

Hitachi has made every effort to assure you hours of trouble free operation from your unit. However, should you require service, a network of Hitachi Authorized Service Facilities has been established in all 50 states and Puerto Rico. Each facility will provide you with convenient and expedient assistance. Our service "Hotline" operator will direct you to the Hitachi Authorized Service Facility nearest you. Just present proof of purchase and/or delivery receipts to the Hitachi Authorized Service Facility and service will be rendered in accordance with the terms of the limited warranty as stated on your warranty card or operating guide.

Should you have any questions regarding in-warranty service, operation or technical assistance, please contact:

Hitachi Home Electronics (America), Inc.

3890 Steve Reynolds Blvd
Norcross, GA 30093
Tel 404-279-5600

Hitachi Sales Corporation of Hawaii
3219 Koapaka St./Honolulu, HI 96819
Tel 808-836-3621

Accessories Add Excitement

We know that once you discover how much your Hitachi VM-H71A can add to your life you will want to use these accessories for even more excitement. Converter lenses, adapters for synchro editing, and car cords are just a few of the exciting accessories available to you from Hitachi. Hitachi takes you to wherever your imagination leads.

Available Accessories

To place an order for any of these items call our toll free number or use the ordering form on page 65.

1-800-HITACHI

To Order in the United States

In Canada - Please use Canadian order form in French version of this manual - Page 65.

By Phone
To place an order by phone, have your VISA, MASTERCARD, or AMERICAN EXPRESS card ready and call Hitachi's toll-free number anytime: 24 hours a day, 7 days a week.

1-800-HITACHI

By Mail
Complete the order form on page 65. Detach it and send it to the following address with your credit card information, money order, or check (in U.S. currency and payable to Hitachi Home Electronics (America), Inc.)

Hitachi Home Electronics (America), Inc.
Parts Division
401 West Artesia Blvd.
Compton, CA 90220

HITACHI WARRANTY CARD (USA Front)

U. S. A. ONLY
NOT VALID IN CANADA

HITACHI

Hitachi Home Electronics (America), Inc.
Hitachi Sales Corporation of Hawaii, Inc.

LIMITED WARRANTY

Hitachi Home Electronics (America), Inc. and Hitachi Sales Corporation of Hawaii ("Hitachi",) warrants this component in duration as stated below:

**** VIDEO CASSETTE RECORDER***
**** CAMCORDER***
**** AC ADAPTER CHARGER***

* **90 DAYS LABOR (Carry-in)**
*** 1 YEAR PARTS (Except Battery)**

Conditions of Hitachi Limited Warranty

Hitachi Video Products are warranted to be free of defects in parts and workmanship at the time of purchase by the original owner. If this product is found to be defective, Hitachi will repair or replace defective parts at no charge to the original owner. Parts used for replacement are warranted for the remainder of the original Limited Warranty period. For 90 days from the date of original purchase, Hitachi will provide labor for the repair or replacement of defective parts without charge, subject to the following conditions:

1. Owner must provide verification of the date of purchase when requesting Limited Warranty Service. (Dated Sales Receipt Required)
2. All repairs must be performed by a Hitachi Authorized Service Facility.

For information concerning repairs, operation, technical assistance or for referral to the location of your nearest Authorized Service Facility or Parts Distributor, call 1-800-HITACHI (1-800-448-2244)

HITACHI HOME ELECTRONICS (AMERICA), INC.
3890 Steve Reynolds Blvd.
Norcross, GA 30093
Tel: 404-279-5600

HITACHI SALES CORPORATION OF HAWAII
3219 Koapaka St.
Honolulu, HI 96819
Tel: 808-836-3621

HITACHI WARRANTY CARD (USA Back)

Warranty Limitations

The Limited Warranty provided by Hitachi does not cover:

A. Cabinet (exterior finish items), Battery Packs, Accessories, Head Cleanings, Video Tape Damage, or TV Set Modifications.
B. Any defect, malfunction, or failure caused by or resulting from improper service, maintenance, repair, use of Video Cleaning Cassettes, or from abuse, neglect, accident, or any other cause beyond the control of Hitachi.
C. Unpacking, set-up or installation, adjustment of customer operated controls, user instruction.
D. Any product with Serial Numbers altered or removed.
E. New products purchased or service performed outside of the continental United States or its possessions.
F. Product used for a commercial or industrial purpose.
NO PERSON, AGENT, DISTRIBUTOR, DEALER, SERVICE FACILITY, OR COMPANY IS AUTHORIZED TO CHANGE, MODIFY, OR AMEND THE TERMS OF THIS LIMITED WARRANTY IN ANY MANNER OR FASHION WHATSOEVER, EXCEPT AND TO THE EXTENT PROVIDED IN THIS LIMITED WARRANTY, HITACHI MAKES NO EXPRESS WARRANTY REGARDING THIS HITACHI PRODUCT. FURTHER, ALL IMPLIED WARRANTIES RELATING TO ANY PORTION OF THIS PRODUCT, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO 90 DAYS FOR LABOR AND TWO YEARS FOR PARTS, THE DURATION OF THE APPLICABLE EXPRESS WARRANTY CONTAINED ABOVE HITACHI SHALL NOT BE LIABLE TO THE PURCHASER OR TO ANY OTHER PERSON FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSS OF PROFIT OR PRODUCT RESULTING FROM ANY DEFECT IN OR MALFUNCTION OR FAILURE OF THIS HITACHI PRODUCT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Important Notice:

Retain your sales receipt for warranty purposes. Please complete the section below for your records as it may be needed in the event of loss. Attach sales receipt to this card.

VIDEO PRODUCTS LIMITED WARRANTY REGISTRATION

(for your record)

Model No.
Serial No.
Date of Purchase
Dealer Name
Dealer Address
City State Zip

HITACHI

HITACHI WARRANTY CARD (Front)
CANADA ONLY

NOT VALID IN U. S. A.

HITACHI

VIDEO PRODUCTS GOLD CARD WARRANTY

*** See inside for the GOLD CARD advantages and how to get it.**

HITACHI

EXCEPTIONAL PERFORMANCE

HITACHI (HSC) CANADA INC.

3300 Trans Canada Highway, Pointe Claire, Quebec H9R 1B1

IMPORTANT NOTICE: This warranty will not apply to products purchased outside of Canada OR sold by any organization other than HITACHI (HSC) CANADA INC.

PROTECTION PLAN CONDITIONS

A - This contract is exclusively for products manufactured and sold by Hitachi (HSC) Canada Inc., hereinafter called "Hitachi", purchased in Canada from a dealer duly accredited by Hitachi. The program is available only for products covered by an original validated Hitachi warranty given at the time of the purchase.
B - Hitachi will make repairs to the product mentioned in this plan, parts and labour charges included, until the expiry date of this plan.
C - THIS PROTECTION PLAN WILL BE IN FORCE ONLY AFTER EXPIRATION OF THE NORMAL PURCHASER'S WARRANTY. During the normal warranty the only valid proof required for servicing the product is the Hitachi GOLD CARD or the bill of purchase. The Protection Plan Card cannot be used as proof of warranty.
Only after the expiration of the normal warranty, the owner can have the product repaired, without charge at any authorized Hitachi Service Center upon presentation of the Protection Plan Card.
D - This Protection Plan is applicable to the product mentioned excluding the accessories such as cables, batteries, etc.
E - THIS PROTECTION PLAN DOES NOT COVER:
(1) Damage caused by incorrect use or negligence, unauthorized alteration, improper storage or repairs done by an unauthorized service depot;
(2) Damage caused by fire, flood, lightning, acts of God or other events beyond the control of Hitachi;
(3) External parts such as the cabinet, knobs, remote control case, antenna, cords, etc....;
(4) Any repairs if the product is used for rental or other commercial use.
(5) Any repairs done outside Canada;
(6) Repairs due to damage in transit, improper handling by carrier or improper packing by the owner (specifically applicable in the case of the product having to be shipped by the owner);

(7) In Home service. All video products must be brought to the Service Center for repairs;
(8) Original installation and any subsequent reinstallation or any transformation of the product;
(9) The replacement of the video camera pick-up element, if the pick-up element has been over exposed to an intense source of light;
(10) Cleaning the video heads.

F - All repair costs must be claimed from Hitachi, at all times, through an authorized Hitachi Service Center. The Plan Owner should never directly pay the authorized Service center unless given special authorization from Hitachi. No repair costs will be reimbursed directly to the Plan Owner.

G - The Plan Owner will receive a PLATINUM CARD which is the only valid document to be presented at the time of repair to an authorized Hitachi Service Center. THIS PROTECTION PLAN IS NOT TRANSFERABLE NOR REFUNDABLE.

H - This Protection Plan can be renewed as long as the request is made before the expiry date of the Plan. Hitachi, however, reserves the right to refuse any renewal.

I - Hitachi reserves the right to cancel the Protection Plan in case of abuse by the owner, in such case, Hitachi will reimburse the owner the portion of the plan cost, based on the period used.

J - This plan does not constitute an insurance policy. It is the owner's responsibility to insure for loss of the product and for any damages which might occur and for loss or damages to any other object and for personal or property liability caused directly or indirectly by the product.

HITACHI CANADA WARRANTY CARD (Back)

Hitachi VIDEO PRODUCTS are guaranteed to be free from defects in workmanship and material. If any failure resulting from either workmanship or material defect should occur under normal and proper usage within the period stated hereunder from the original provable date of purchase, such failure should be repaired at no cost to the buyer, provided the defective product is brought to a HITACHI AUTHORIZED SERVICE CENTER in Canada.

NOTE: The GOLD CARD becomes the proof of your warranty. it assures you of a personalized quality service and it is accepted by our authorized service centres everywhere in Canada.

However, to receive your exclusive Hitachi GOLD CARD, you must include a copy of your bill of sale with the return portion of this warranty registration card.

"GOLD" WARRANTY PERIOD

Video Tape Recorder, Tuner, Timer, 1 year parts and labour.

Camera, camcorder, AC Adaptor, Charger, 1 year parts and labour.

All goods returned to either Hitachi or a Hitachi Authorized Service Center must be shipped on a "PREPAID BASIS". To avoid any damage to the returned goods, please ensure that proper packaging procedures are followed. A short written description of the problem along with proof of warranty should accompany the product returned for repair. Only products under warranty will be returned on a no-charge basis to the customer. The customer is responsible for all transport costs if the product is no longer under warranty.

WARRANTY DOES NOT COVER

1. Products received for repair without sales or delivery receipt showing date of purchase by the original customer.
2. Damages caused by incorrect use, carelessness, unauthorized alterations, improper storage or unauthorized service or repairs.
3. Damage caused by fire, flood, lightning, acts of God, or other events beyond the control of Hitachi.
4. Batteries, tape cassettes, earphones, antennas, accessories and external parts such as cabinet and knobs.
5. PRODUCTS PURCHASED OUTSIDE CANADA.
6. Products used outside Canada
7. In transit damage claims, improper handling by carrier or post offices.
8. Products or parts thereof which have had serial numbers removed, altered or defaced.
9. Products used for commercial purposes.
10. ***PRODUCTS USED FOR RENTAL***
11. In home service at the customer's location.
12. Original installation (set-up) and all normal maintenance needed such

as CLEANING OF VIDEO HEADS.
13. The replacement of the video camera pickup element if the pickup element has been OVER EXPOSED to an intense source of light.
14. Products sold in Canada by any organization other than HITACHI (HSC) CANADA INC.

IMPORTANT: *This warranty is in lieu of all other warranties, guarantees, or agreements whether express or implied, and no person, dealer or company is authorized to change, modify, or extend its terms in any manner whatsoever.*

HITACHI WARRANTY REGISTRATION (for your records)

Model No.
Serial No.
Date of Purchase
Dealer's Name
Dealer's Address
City
Province